



Dell 5330dn

Service Manual

31 Aug 2008

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1. Precautions

In order to prevent accidents and to prevent damage to the equipment please read the precautions listed below carefully before servicing the printer and follow them closely.

1.1 Safety Warning

- (1) Only to be serviced by appropriately qualified service engineers.

High voltages and lasers inside this product are dangerous. This printer should only be serviced by a suitably trained and qualified service engineer.

- (2) Use only Dell replacement parts

There are no user serviceable parts inside the printer. Do not make any unauthorized changes or additions to the printer, these could cause the printer to malfunction and create electric shock or fire hazards.

- (3) Laser Safety Statement

The Printer is certified in the U.S. to conform to the requirements of DHHS 21 CFR, chapter 1 Subchapter J for Class 1(1) laser products, and elsewhere, it is certified as a Class I laser product con-forming to the requirements of IEC 825. Class I laser products are not considered to be hazardous. The laser system and printer are designed so there is never any human access to laser radiation above a Class I level during normal operation, user maintenance, or prescribed service condition.

Warning >> Never operate or service the printer with the protective cover removed from Laser/Scanner assembly. The reflected beam, although invisible, can damage your eyes. When using this product, these basic safety pre-cautions should always be followed to reduce risk of fire, electric shock, and injury to persons.



CAUTION - INVISIBLE LASER RADIATION
WHEN THIS COVER OPEN.
DO NOT OPEN THIS COVER.

VORSICHT - UNSICHTBARE LASERSTRAHLUNG,
WENN ABDECKUNG GE...FFNET.
NICHT DEM STRAHL AUSSETZEN.

ATTENTION - RAYONNEMENT LASER INVISIBLE EN CAS
D'OUVERTURE. EXPOSITION DANGEREUSE
AU FAISCEAU.

ATTENZIONE - RADIAZIONE LASER INVISIBLE IN CASO DI
APERTURA. EVITARE L'ESPOSIZIONE AL
FASCIO.

PRECAUCION - RADIACION LASER INVISIBLE CUANDO SE ABRE.
EVITAR EXPONERSE AL RAYO.

ADVARSEL - USYNLIG LASERSTRÅLING VED ÅBNING, NR
SIKKERHEDSBRYDERE ER UDE AF FUNKTION.
UNDG UDSÆTTELSE FOR STRÅLING.

ADVARSEL - USYNLIG LASERSTRÅLING NR DEKSEL
PNES. STIRR IKKE INN I STRÅLEN.
UNNG EKSPONERING FOR STRÅLEN.

VARNING - OSYNLIG LASERSTRÅLING NR DENNA DEL
R...PPNAD OCH SPRÄN R URKOPPLAD.
BETRAKTA EJ STRÅLEN. STRÅLEN R FARLIG.

VARO! - AVATTAESSA JA SUOJALUKITUS OHITETTAESSA
OLET ALTTIINA NKYMTT...MLLE LASER-
STEILYLLE L KATSO STEESEEN.

注意 - 严禁揭开此盖, 以免激光泄露灼伤

주의 - 이 덮개를 열면 레이저광에 노출될 수 있으므로
주의하십시오.

1.2 Caution for safety

1.2.1 Toxic material

This product contains toxic materials that could cause illness if ingested.

- (1) If the LCD control panel is damaged it is possible for the liquid inside to leak. This liquid is toxic. Contact with the skin should be avoided, wash any splashes from eyes or skin immediately and contact your doctor. If the liquid gets into the mouth or is swallowed see a doctor immediately.
- (2) Please keep Drum cartridge and Toner Cartridge away from children. The toner powder contained in the Drum cartridge and Toner Cartridge may be harmful and if swallowed you should contact a doctor.

1.2.2 Electric Shock and Fire Safety Precautions

Failure to follow the following instructions could cause electric shock or potentially cause a fire.

- (1) Use only the correct voltage, failure to do so could damage the printer and potentially cause a fire or electric shock.
- (2) Use only the power cable supplied with the printer. Use of an incorrectly specified cable could cause the cable to overheat and potentially cause a fire.
- (3) Do not overload the power socket, this could lead to overheating of the cables inside the wall and could lead to a fire.
- (4) Do not allow water or other liquids to spill into the printer, this can cause electric shock. Do not allow paper clips, pins or other foreign objects to fall into the printer these could cause a short circuit leading to an electric shock or fire hazard.
- (5) Never touch the plugs on either end of the power cable with wet hands, this can cause electric shock. When servicing the printer remove the power plug from the wall socket.
- (6) Use caution when inserting or removing the power connector. The power connector must be inserted completely otherwise a poor contact could cause overheating possibly leading to a fire. When removing the power connector grip it firmly and pull.
- (7) Take care of the power cable. Do not allow it to become twisted, bent sharply round corners or otherwise damaged. Do not place objects on top of the power cable. If the power cable is damaged it could overheat and cause a fire or exposed cables could cause an electric shock. Replace a damaged power cable immediately, do not reuse or repair the damaged cable. Some chemicals can attack the coating on the power cable, weakening the cover or exposing cables causing fire and shock risks.
- (8) Ensure that the power sockets and plugs are not cracked or broken in any way. Any such defects should be repaired immediately. Take care not to cut or damage the power cable or plugs when moving the machine.
- (9) Use caution during thunder or lightening storms. Dell recommend that this machine be disconnected from the power source when such weather conditions are expected. Do not touch the machine or the power cord if it is still connected to the wall socket in these weather conditions.
- (10) Avoid damp or dusty areas, install the printer in a clean well ventilated location. Do not position the machine near a humidifier. Damp and dust build up inside the machine can lead to overheating and cause a fire.
- (11) Do not position the printer in direct sunlight. This will cause the temperature inside the printer to rise possibly leading to the printer failing to work properly and in extreme conditions could lead to a fire.
- (12) Do not insert any metal objects into the machine through the ventilator fan or other part of the casing, it could make contact with a high voltage conductor inside the machine and cause an electric shock.

1.2.3 Handling Precautions

The following instructions are for your own personal safety, to avoid injury and so as not to damage the printer

- (1) Ensure the printer is installed on a level surface, capable of supporting its weight. Failure to do so could cause the printer to tip or fall.
- (2) The printer contains many rollers, gears and fans. Take great care to ensure that you do not catch your fingers, hair or clothing in any of these rotating devices.
- (3) Do not place any small metal objects, containers of water, chemicals or other liquids close to the printer which if spilled could get into the machine and cause damage or a shock or fire hazard.
- (4) Do not install the machine in areas with high dust or moisture levels, beside an open window or close to a humidifier or heater. Damage could be caused to the printer in such areas.
- (5) Do not place candles, burning cigarettes, etc on the printer, These could cause a fire.

1.2.4 Assembly / Disassembly Precautions

Replace parts carefully, always use Dell parts. Take care to note the exact location of parts and also cable routing before dismantling any part of the machine. Ensure all parts and cables are replaced correctly. Please carry out the following procedures before dismantling the printer or replacing any parts.

- (1) Check the contents of the machine memory and make a note of any user settings. These will be erased if the mainboard or network card is replaced.
- (2) Ensure that power is disconnected before servicing or replacing any electrical parts.
- (3) Disconnect printer interface cables and power cables.
- (4) Only use approved spare parts. Ensure that part number, product name, any voltage, current or temperature rating are correct.
- (5) When removing or re-fitting any parts do not use excessive force, especially when fitting screws into plastic.
- (6) Take care not to drop any small parts into the machine.
- (7) Handling of the OPC Drum
 - The OPC Drum can be irreparably damaged if it is exposed to light. Take care not to expose the OPC Drum either to direct sunlight or to fluorescent or incandescent room lighting. Exposure for as little as 5 mins can damage the surface's photoconductive properties and will result in print quality degradation. Take extra care when servicing the printer. Remove the OPC Drum and store it in a black bag or other lightproof container. Take care when working with the covers (especially the top cover) open as light is admitted to the OPC area and can damage the OPC Drum.
 - Take care not to scratch the green surface of the OPC Drum Unit.
If the green surface of the Drum Cartridge is scratched or touched the print quality will be compromised.

1.2.5 Disregarding this warning may cause bodily injury

- (1) Be careful with the high temperature part.
The fuser unit works at a high temperature. Use caution when working on the printer. Wait for the fuser to cool down before disassembly.
- (2) Do not put finger or hair into the rotating parts.
When operating a printer, do not put hand or hair into the rotating parts (Paper feeding entrance, motor, fan, etc.). If do, you can get harm.
- (3) When you move the printer.
This printer weighs 19.3kg (42.5 lbs) including toner cartridge and cassette. Use safe lifting and handling techniques. Use the lifting handles located on each side of the machine. Back injury could be caused if you do not lift carefully.
- (4) Ensure the printer is installed safely.
The printer weighs 19.3kg (42.5 lbs), ensure the printer is installed on a level surface, capable of supporting its weight. Failure to do so could cause the printer to tip or fall possibly causing personal injury or damaging the printer.
- (5) Do not install the printer on a sloping or unstable surface. After installation, double check that the printer is stable.

1.3 ESD Precautions

Certain semiconductor devices can be easily damaged by static electricity. Such components are commonly called “Electrostatically Sensitive (ES) Devices” or ESDs. Examples of typical ESDs are: integrated circuits, some field effect transistors, and semiconductor “chip” components.

The techniques outlined below should be followed to help reduce the incidence of component damage caused by static electricity.

Caution >>Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

1. Immediately before handling a semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, employ a commercially available wrist strap device, which should be removed for your personal safety reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ESDs, place the assembly on a conductive surface, such as aluminum or copper foil, or conductive foam, to prevent electrostatic charge buildup in the vicinity of the assembly.
3. Use only a grounded tip soldering iron to solder or desolder ESDs.
4. Use only an “anti-static” solder removal device. Some solder removal devices not classified as “anti-static” can generate electrical charges sufficient to damage ESDs.
5. Do not use Freon-propelled chemicals. When sprayed, these can generate electrical charges sufficient to damage ESDs.
6. Do not remove a replacement ESD from its protective packaging until immediately before installing it. Most replacement ESDs are packaged with all leads shorted together by conductive foam, aluminum foil, or a comparable conductive material.
7. Immediately before removing the protective shorting material from the leads of a replacement ESD, touch the protective material to the chassis or circuit assembly into which the device will be installed.
8. Maintain continuous electrical contact between the ESD and the assembly into which it will be installed, until completely plugged or soldered into the circuit.
9. Minimize bodily motions when handling unpackaged replacement ESDs. Normal motions, such as the brushing together of clothing fabric and lifting one’s foot from a carpeted floor, can generate static electricity sufficient to damage an ESD.

2. Product spec and feature

2.1 Product Specifications

2.1.1 Product Overview

Concept

Low CPP & High Performance LBP for networked Environment

Target

- Mid to High Workgroup (20 ~ 50 People)
- AMPV 3000sh. & Max. Duty 250K Target

Feature

- Up to 50ppm/Ltr.
- 1200 x 1200 dpi Resolution
- 500Mhz Processor
- 256MB(Max. 768MB)
- 500sh. CST(Max.3240sh)
- 10K / 20K Toner Capacity
- Duplex Built-in
- Optional 80GB HDD
- Various Paper Handling Option
 - 500sh. Option Cassette(75gsm)
 - 2100 sh. High Capacity Feeder(HCF)
 - 650sh. Stacker

2.1.2 Specifications

- Product Specifications are subject to change without notice. See below for product specifications.

2.1.2.1 General Print Engine

| Item | | Dell™ 5330dn |
|--------------|---------------|---|
| Engine Speed | Simplex | Up to 48 ppm in A4 (50 ppm in Letter) |
| | Duplex | Up to 32 ipm in A4 (34 ipm in Letter) |
| Warmup time | - | Less than 45 sec from cold boot Less than 22 sec from sleep mode |
| FPOT | From Ready | Less than 8.5 sec |
| | From Sleep | Less than 30 sec |
| | From Coldboot | Less than 53 sec |
| Resolution | - | 1200 dpi Addressable |

2.1.2.2 Controller & S/W

| Item | | Dell™ 5330dn |
|-------------------|----------------|---|
| Processor | | 500MHz |
| Memory | Std. | 256MB |
| | Max. | 768MB * Using 2-slot Dimm * One for a Basic slot: 256MB, Another for an Optional slot: 512M |
| Printer Languages | - | PostScript3, PCL5e/PCL6, IBM ProPrinter, EPSON, PDF Direct V1.4 (only HDD installed) |
| Fonts | - | * 93 scalable, 9 bitmap, 136 PostScript3 fonts * OCR-A, OCR-B Fonts |
| Driver | Default Driver | PCL6 : Win NT4.0(PCL6 only)/2000/XP(32/64bits)/Vista(32/64bits)/2003 Server(32/64bits)/2008 Server(32/64bits) PS : Linux & Mac |
| | Supporting OS | PCL6 : Win NT4.0(PCL6 only)/2000/XP(32/64bits)/Vista(32/64bits)/2003 Server(32/64bits)/2008 Server(32/64bits) |
| | | Various Linux OS: - Red Hat 8~9, - Fedora Core 1~4 - Mandrake 9.2~10.1 - SuSe 8.2~9.2 - SuSe linux Enterprise Version 10 - Redhat WS Linux 5.0 |
| | | Mac OS 9.x/10.1~10.5 |
| | WHQL | Windows 2000, XP, 2003 Server, Window Vista, 2008 Server |
| Wired Network | Protocol | TCP/IP, SNMP, HTTP 1.1, AppleTalk, IPv4/IPv6, Ipsec |
| | Supporting OS | Windows Win NT4.0/2000/XP(32/64bits)/Vista(32/64bits)/2003 Server(32/64bits) NetWare 5.x, 6.x Mac OS 9.x, 10.1~10.4 Various Linux OS including Red Hat 8~9, Fedora Core 1~4, Mandrake 9.2~10.1, and SuSE 8.2~9.2 Unix HP-UX Citrix, Terminal Server, IBM AS-400, SAP |
| Wireless Network | Protocol | Same as Wired |
| | Supporting OS | Same as Wired |

| Item | | Dell™ 5330dn |
|-----------------------|---|---|
| Interface | | |
| Serial | - | N/A |
| Parallel | - | IEEE 1284 |
| USB | - | Hi-Speed USB 2.0 |
| USB Host | - | Hi-Speed USB 2.0(2 Port) |
| Wired Network | - | Ethernet 10/100/1000 Base TX (Internal) |
| Wireless Network | - | 802.11 b/g Wireless LAN (Internal) |
| User Interface | | |
| LCD | - | 4-line Graphic LCD |
| LED | - | 1 LED |
| Key | - | 8 Key |

2.1.2.3 Paper Handling

| Item | | Dell™ 5330dn |
|-------------------------------|--------------|---|
| Standard Capacity | - | 520-sheet Cassette Tray, 100-sheet Multi Purpose Tray @ 75gsm(20lb) |
| Max. Capacity | Input | 3240 sheets @ 75g/m ² (20lb) |
| Printing | Max. Size | 216 x 356mm (8.5 x 14) |
| | Min. Size | 76 x 127mm (3.0 x 5.0) (>105g) |
| Multi-purpose tray | | |
| Capacity | Plain Paper | 100 sheets @ 75gsm(20lb) |
| | Transparency | 50 sheets |
| | Label | 25 sheets @ 175gsm |
| | Envelope | 10 sheets @ 80gsm |
| Media sizes | - | A4, A5, A6, Letter, Legal, Oficio, Folio, B5, 3x5, Monarch, No.10, DL, C5, C6 |
| Media type | - | Transparencies, Envelopes, Labels, Card stock |
| Media weight | - | <ul style="list-style-type: none"> Plain Paper 60~163gsm(16~43lb) Supported Thick Paper 176~210gsm |
| Sensing | - | Paper empty sensor |
| Standard Cassette Tray | | |
| Capacity | - | 520 sheets @ 75g/m ² (20lb) |
| Media sizes | - | A4, A5, Letter, Legal, Executive, Folio, B5 |
| Media types | - | Plain Paper |
| Media weight | - | <ul style="list-style-type: none"> Plain Paper 60~105gsm (16~28lb) Supported Thick Paper 105~120gsm |

| Item | | Dell™ 5330dn |
|-------------------------------|-----------------|---|
| Sensing | - | Paper empty sensor, Paper Size Sensor |
| Optional Cassette Tray | Optional | |
| Capacity | - | 520 sheets @ 75g/m ² (20lb) |
| Media sizes | - | A4, A5, Letter, Legal, Executive, Folio, B5 |
| Media types | - | Plain Paper |
| Media weight | - | <ul style="list-style-type: none"> • Plain Paper 60~105gsm (16~28lb) • Supported Thick Paper 105~120gsm |
| Sensing | - | Paper empty sensor, Paper Size Sensor |
| HCF | Optional | |
| Capacity | - | 2100 sheets @ 75g/m ² (20lb) |
| Media sizes | - | A4, Letter, Folio, Legal |
| Media types | - | Plain Paper |
| Media weight | - | 20~24lb (75~90g/m ²) |
| Sensing | - | Paper empty sensor, Paper Size Sensor |
| Output Stacking | | |
| Capacity | Face-Down | 250 sheets @ 75gsm (20lb) |
| | Face-Up | 100 sheets @ 75g/m ² (20lb) |
| | Max Capacity | 1000 sheet @ 75g/m ² (20lb) |
| Output Full sensing | - | Paper full Sensor |
| Stacker | Optional | |
| Capacity | Face-Down | 1 X 650 sheets @ 75g/m ² (20lb) |
| Duplex | | |
| Supporting | - | Built-in |
| Media sizes | - | A4, Letter, Legal, Folio, Oficio |
| Media types | - | Plain paper |
| Media weight | - | <ul style="list-style-type: none"> • 60~105gsm (16~28lb) • Supported Thick Paper 120gsm |
| Printable Area | | |
| Non-Printable Area | Envelope | 10mm(0.4) from edge(Top, Bottom, Left, Right) |
| | Other Media | 4mm(0.16) from edge(Top, Bottom, Left, Right) |

2.1.2.4 Consumables

| Item | | Dell™ 5330dn |
|-----------|-------------|--|
| Developer | Black | Standard: Average Cartridge Yield 10K standard pages. High Yield: Average cartridge Yield 20K standard pages. Declared cartridge yield in accordance with ISO/IEC 19752. |
| | Key | Encrypted CRUM |
| | Life detect | Toner remaining volume would be traced via software |

2.1.2.5 Reliability & Service

| Item | | Dell™ 5330dn |
|----------------------------|---|---|
| Printing Volume (SET AMPV) | - | 6,000 sheets / month |
| Max. Monthly Duty | - | 250,000 sheets |
| MPBF | - | 150,000 sheets |
| MTTR | - | 30 min. |
| SET Life Cycle | - | 750,000 sheets or 5 years (whichever comes first) |

2.1.2.6 Environment

| Item | | Dell™ 5330dn |
|---|-----------------|--|
| Operating Environment | Temperature | 10C to 32C |
| | Humidity | 20% to 80% |
| Acoustic Noise Level(Sound Power/ Pressure) | Printing | Less than 55.0dBA (Sound Pressure) |
| | Standby | Less than 30.0dBA (Sound Pressure) |
| | Sleep | Back Ground Level |
| Power Consumption | Ready | Less than 150W |
| | AVG. | Less than 700W |
| | Max/Peak | Less than 800W |
| | Sleep/Power Off | Less than 13W/0W |
| Dimension (W x D x H) | SET | 420 x 505 x 385mm (16.5" x 19.9"x 15.2") |
| | SET Packing | |
| | Toner | 313 x 251 x 147mm |
| | Toner Packing | 370 x 315 x 187mm (External) |
| Weight | SET | 19.3kg (42.5 lbs) |
| | Toner(10K/20K) | 10K : 2.08Kg(4.59lbs), 20K : 2.37Kg(5.23lbs) |
| | Gross | 24.1Kg (Shippment wieght) |

2.1.2.7 Packing & Accessory

| Item | | Dell™ 5330dn |
|--------|---|--|
| In-Box | - | <ul style="list-style-type: none"> • Dell Review and Fixed <p> Driver Install CD-ROM Power Cable Quick Install Guide Warranty Registration Card User's Manual (PDF File) 10K Initial Print Cartridge USB Cable (Option) IEEE 1284 Cable(Optional) </p> |

2.1.2.8 Options

| Item | | Dell™ 5330dn |
|-------------------------|---|---|
| Memory | - | Using 2-slot Dimm One for a Basic slot : 256MB Another for an Optional slot : 512MB |
| Option Cassette | - | 3 X 520 sheet |
| HCF | | 2100 sheets (Letter, A4, Folio, Legal) |
| Stacker | - | 1 X 650 sheet |
| Wired Network (Gigabit) | - | Ethernet 10/100/1000 Base TX (Internal) |
| Wireless Network | - | IEEE 802.11 b/g |
| Hard Disk | - | 2.5" SATA 80GB |

2.1.2.9 Others

| Item | | Dell™ 5330dn |
|------------------------------|-----------------------|---|
| Performance | Speed | Be equal or better than LX T644 |
| | Resolution | Be equal or better than LX T644 |
| Service | Service Item & Period | 1. Transfer Roller : 150K pages 2. Fuser Unit : 150K pages 3. Pick-up Roller : 150K pages 4. Cassette Unit : 150K pages |
| **Service Kit | - | • Maintenance Kit 1. Roller Transfer : 150K pages 2. Unit Roller Idle : 150K pages 3. Unit Pick-up : 150K pages 4. Unit Holder Pad : 150K pages |
| Power Certification | | Class B |
| Environmental Certifications | Germany | Blue Angel, PTS(BAM) |
| | U.K. | N/A |
| | Nordic | N/A |
| | Sweden | N/A |
| | Nordic | N/A |
| | Others | |

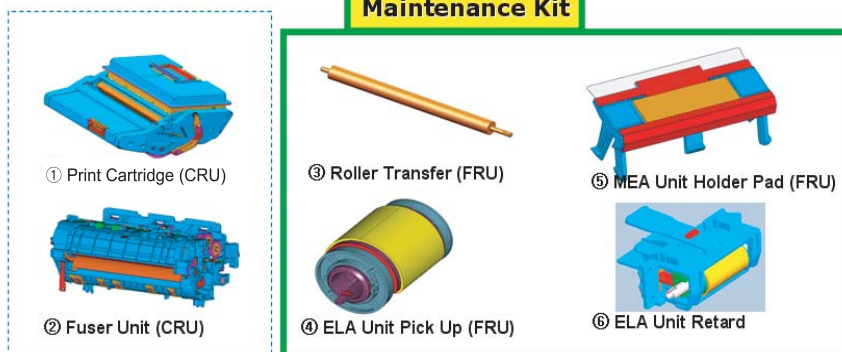
**Service Kit

Replacement Parts Life

CRU : Consumable Replacement Unit
FRU : Field Replacement Unit

| No | Part name | Life | Remark |
|----|----------------------|---------|--------|
| ① | PRINT CARTRIDGE | 10K/20K | CRU |
| ② | FUSER UNIT | 150K | CRU |
| ③ | ROLLER TRANSFER | 150K | FRU |
| ④ | ELA UNIT-PICK UP | 150K | FRU |
| ⑤ | MEA UNIT-HOLDER PAD | 150K | FRU |
| ⑥ | ELA UNIT-ROLLER IDLE | 150K | FRU |

Maintenance Kit

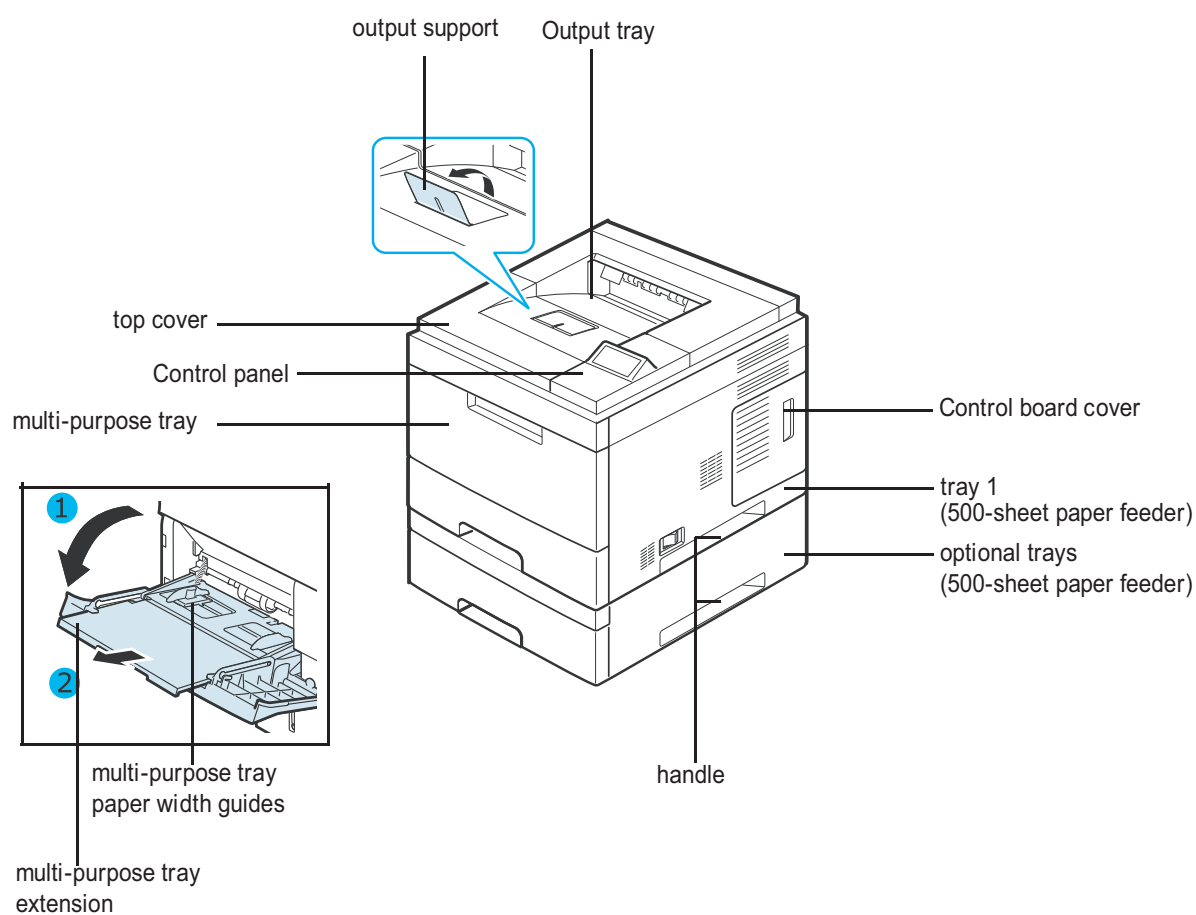


2.2 System Overview

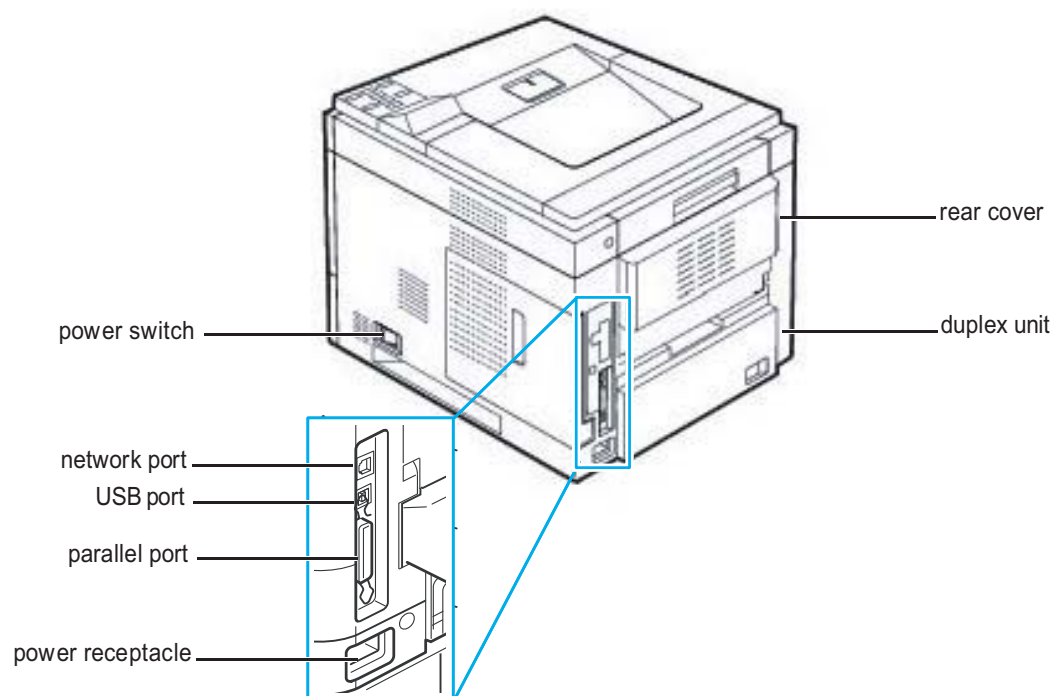
This chapter describes the functions and operating principles of the main components.

2.2.1 Printer Components

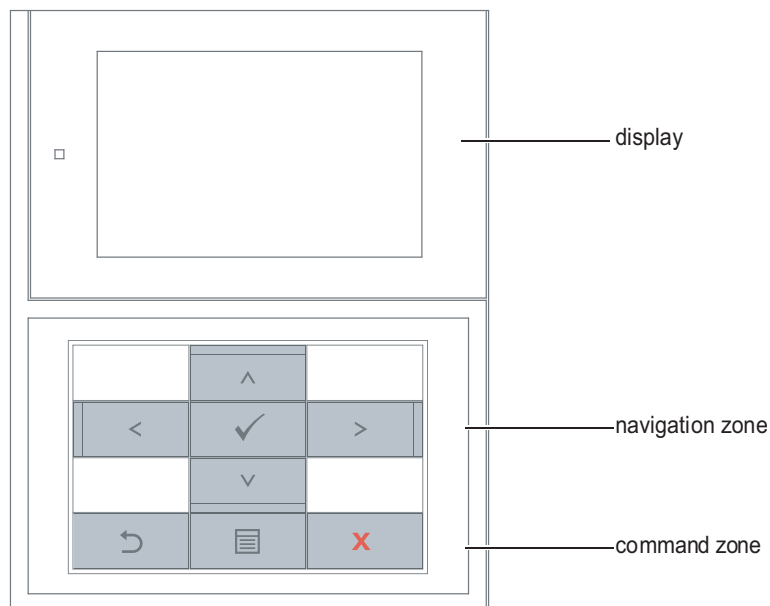
2.2.1.1 Front View











2.2.1.2 Rear View

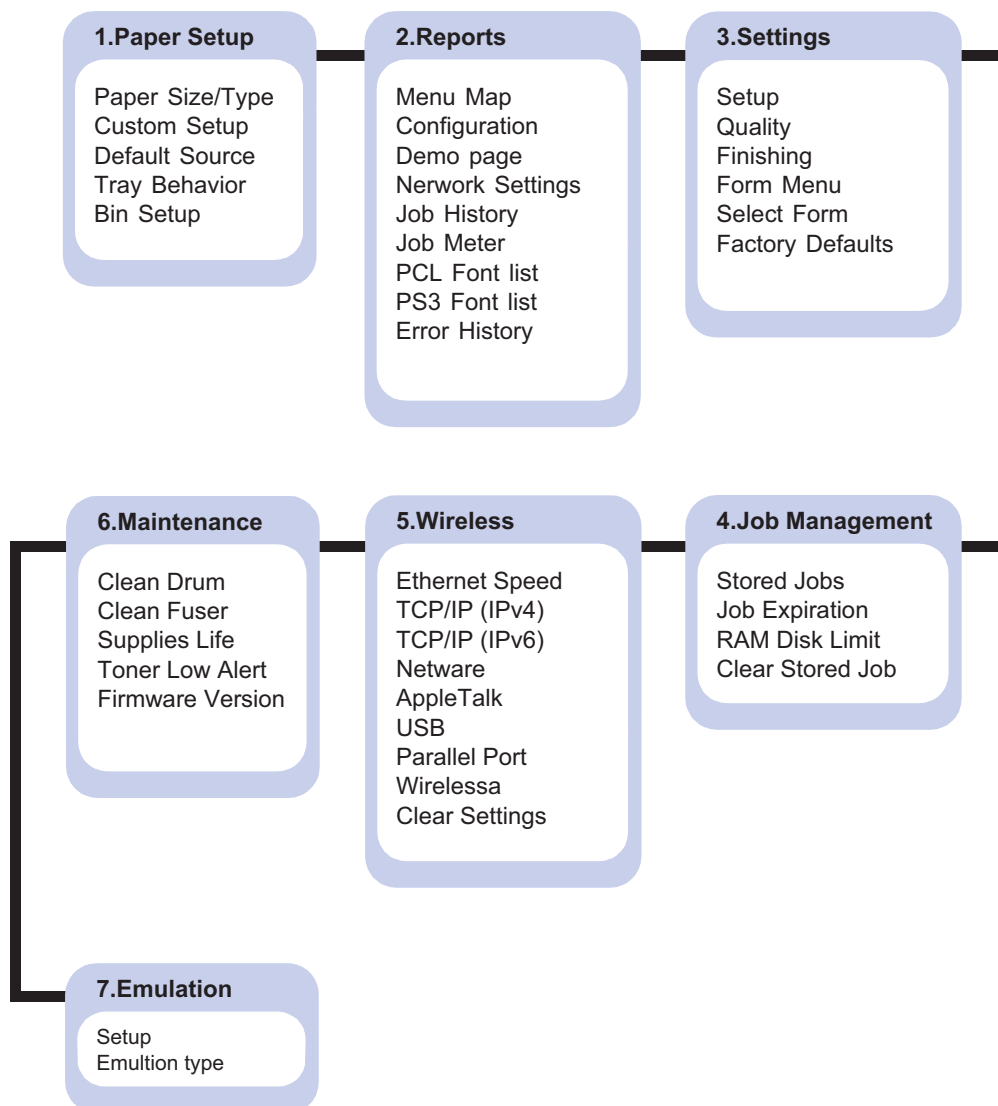


2.2.1.3 OPE Panel



| Button: | Discription: |
|---|---|
|  | |
|  | 4-way Scroll, increasing or decreasing values. |
|  | |
|  | |
|  | Confirms the selection on the screen. |
|  | Stop an operation at any time. |
|  | Sends you back to the upper menu level. |
|  | Enter Menu mode and scroll through the available menus. |

2.2.1.3.1 Dell 5330dn Mono Laser Printer Menu Function



a. Available with an optional Wireless network card.

■ Menu Map (User Mode)









| 1st level | 2nd Level | 3rd level | 4th level | 5th level |
|-------------|-----------------|-----------------------|----------------------|--|
| Paper Setup | Paper Size/Type | MPF | Size | Letter ✓ Legal Oficio Folio A4 ISO B5 JIS B5 Statement Executive A5 A6 Monarch Env. DL Env. C5 Env. C6 Env. No. 10 Env. Custom |
| | | | Type | Plain Paper✓ Thick Thicker Thin Colored Preprinted Recycled Transparency Labels Card Stock Bond Letterhead |
| | | Tray <X> | Size | Letter ✓ Legal Folio A4 JIS B5 Executive A5 Custom Paper |
| | | | Type | Plain Paper✓ Thick Thin Colored Preprinted Recycled Bond Letterhead |
| | Custom Setup | Units | INCH Milimeters | |
| | | MPF TRAY <X> | Width | XXX mm |
| | | | Length | XXX mm |
| | Default Source | MP Feeder Tray <x> | | |
| | Tray Behavior | Tray Linking | On✓ Off | |
| | | Substitute Size | Nearest Size✓ OFF | |
| | | Configure MPF | Tray Mode✓ Bypass | |

| Paper Setup (continue..) | Bin Setup (Shown when Bin installs) | Link √ De-Link | | |
|-----------------------------|---|---|---|--|
| Reports | Menu Map | | | |
| | Configuration | | | |
| | Demo page | | | |
| | Network Settings | | | |
| | Job History | | | |
| | Job Meter | | | |
| | PCL Font List | | | |
| | PS Font List | | | |
| | Error History | | | |
| Settings | Setup | Language | English √ Deutsch Espanol Francais Italiano Nederlands | |
| | | Power Save | 5 min 10 min 15 min 30 min√ 60 min 120 min | |
| | | Altitude Adjust | Plain √ High Higher Highest | |
| | | Timeout | Print Timeout Specifies the amount of time the printer waits for an end- of-job message before canceling the remainder of the print job. | 15 Sec 30 Sec 60 Sec 90 Sec√ 180 Sec |
| | | Print Recovery | Auto Continue | On Off√ |
| | | | Jam Recovery | On√ Off |
| | | Auto CR | LF LF+CR√ | |
| | | Date & Time (Country Dependent) | 09-07-2003[MDY] 08:30(AM) | |
| | | Day Light Saving (Only if HDD is installed) | Manual | Start Date |
| | | | Auto | |
| | | | Off√ | |
| | Quality | Resolution | 600dpi 1200dpi Draft Mode | |
| | | Darkness | Normal Light Dark | |
| | Finishing | Copies | 1-999 | |
| | | Orientation | Portrait√ Landscape | |
| | | Margin Shift | Top Margin | [0-250]mm:0 * |
| | | | Left Margin | [0-164]mm:0 * |

| | | | | |
|--------------------------|---------------------------|---|---|--------------------------------------|
| Settings (continue..) | Finishing (continue..) | Duplex | Off√ Long Edge Short Edge | |
| | | Duplex Margin | Top Margin | [0.0-10]mm:5.0 * |
| | | | Left Margin | [0.0-10]mm:5.0 * |
| | | | Short Binding | [0-22]mm:0 * |
| | | | Long Binding | [0-22]mm:0 * |
| | | Collation | On Off√ | |
| | | Separator Sheet | On Off√ | |
| | | Print Blank Pages | Print√ Do Not Print | |
| | Form Menu | off√ | | |
| | | Single Form | | |
| | | Double Form | | |
| | Select Form | 1st Form | Name1 | Name2 |
| | | 2nd Form | Name1 | Name2 |
| | Factory Defaults | Do Not Restore Restore Now | | |
| Job Management | Stored Jobs | User ID1 User ID2 | Job1 Job2 | Pin |
| | Job Expiration | Off√ 1 hour 4 hours 24 hours 1 week | | |
| | RAM Disk Limit | 0 ~ 96 MB : When Option memory is not installed 0 ~ 288MB : When Option Memory is installed Default : 64MB | | |
| | Clear Stored Job | Secure Job Stored Print ALL | | |
| Wireless | Ethernet Speed | Auto√ 10M Half 10M Full 100M Half 100M Full 1000M Full | | |
| | | | | |
| | TCP/IP (IPv4) | IPv4 Activate | On √ Off | |
| | | View Host Name | | |
| | | Set IP Address | Manual √ | IP Address Subnet Mask Gateway |
| | | | DHCP | |
| | | | BOOTP | |
| | | Show IP Address | Only Show IP address, Subnet Mask, Gateway. | |
| | TCP/IP (IPv6) | IPv6 Activate | On √ Off | |
| | | DHCPv6 Config | Router√ | |
| | | | DHCPv6 Addresses | |
| | | | DHCPv6 Off | |








| | | | | |
|--------------------------|-----------------|---------------------------------------|--|-----------|
| Wireless (continue..) | Netware | Activate | On√ Off | |
| | | Frame Type | Auto√ 802.2 802.3 Ethernet II SNAP | |
| | AppleTalk | Activate | On√ Off | |
| | | View Name | Host Name | |
| | USB | Enable√ Disable | | |
| | Parallel Port | Enable√ Disable | | |
| | Wireless | WLAN Settings | Search List √ | |
| | | | Custom | Edit SSID |
| | | WLAN Default | | |
| | | WLAN Signal | | |
| | Clear Settings | Yes No√ | | |
| Maintenance | Clean Drum | Printing... | | |
| | Clean Fuser | Printing... | | |
| | Supplies Life | Total | 124 Page | |
| | | Toner Remains | 99% Remains | |
| | Toner Low Alert | On√ Off | | |
| Emulation | Emulation Type | Auto√ PCL PostScript HEXDUMP | | |
| | Setup | PCL | Typeface | PCL1 √ |
| | | | | PCL2 |
| | | | | PCL3 |
| | | | | PCL4 |
| | | | | ... |
| | | | | PCL102 |
| | | | | PCL103 |
| | | | | PCL104 |
| | | | Symbol | ROMAN8 |
| | | | | DESKTOP |
| | | | | ISOL1 |
| | | | | ISOL2 |
| | | | | ISOL5 |
| | | | | ISOL6 |
| | | | | MCTEXT |
| | | | | MATH8 |
| | | | | MSPUBL |
| | | | | PIFONT |
| | | | | PSMATH |
| | | | | PSTEXT |
| | | | | VNINTL |
| | | | | VNMATH |
| | | | | VNUS |
| | | | | WINL30 |
| | | | | WINL1 |
| | | | | WINL2 |
| | | | | WINL5 |

| | | | | |
|---------------------------|-----------------------|---------------------|------------------------|--------------|
| Emulation (continue..) | Setup (continue..) | PCL (continue..) | Symbol (continue..) | WINBALT |
| | | | | SYMBOL |
| | | | | WINGDING |
| | | | | LEGAL |
| | | | | ISO4 |
| | | | | ISO6 |
| | | | | ISO11 |
| | | | | ISO15 |
| | | | | ISO17 |
| | | | | ISO21 |
| | | | | ISO60 |
| | | | | ISO69 |
| | | | | PC775 |
| | | | | PC1004 |
| | | | | PC8 √ |
| | | | | PC8DN |
| | | | | PC850 |
| | | | | PC852 |
| | | | | PC8TK |
| | | | | CYRILLIC |
| | | | | PCCYRIL |
| | | | | 15Q |
| | | | | 8H |
| | | | | 0H |
| | | | | GREEK |
| | | | | Arabic8 |
| | | | | WinArabic |
| | | | | PC864 |
| | | | | Farsi |
| | | | | ISOArabic |
| | | | | PC737 |
| | | | | OCR-A |
| | | | | OCR-B |
| | | | Point Size | 4.00 |
| | | | | 4.25 |
| | | | | 4.50 |
| | | | | ... |
| | | | | 12.00* |
| | | | | 12.25 |
| | | | | ... |
| | | | | 999.75 |
| | | | Courier | Regular √ |
| | | | | Dark |
| | | | Pitch | 0.44 |
| | | | | 0.45 |
| | | | | ... |
| | | | | 10.00 √ |
| | | | | ... |
| | | | | 99.99 |
| | | | Lines | [5-128]:64 √ |
| | | PostScript | Print PS Error | On |
| | | | | Off √ |

1. Press Menu ().
2. Press Scroll ( to ) to highlight the desired setting and press Select ().
3. If the setting item has sub menus, repeat step 2.
4. Press Scroll ( to ) to access the required value.
5. Press Select () to save the selection.
- 6 Press Cancel () to return to Standby mode.















2.2.1.3.2 Printing a demo papge

After setting up your printer, print a demo page to make sure that the printer is operating correctly.

1. Press Menu ().
2. Press Scroll ( to ) to highlight Reports and press Select ().
3. Press Scroll ( to ) to highlight Demo page and press Select ().
4. A demo page prints out.















2.2.1.3.3 Changing the Display Language

To change the displayed language that the operator panel displays, follow these steps:

1. Press Menu ().
2. Press Scroll ( to ) to highlight Settings and press Select ().
3. Press Scroll ( to ) to highlight Setup and press Select ().
4. Press Scroll ( to ) to highlight Language and press Select ().
5. Press Scroll ( to ) to display the language you want.
The available languages are English, Deutsch, Espanol, FRANCAIS, Italiano, and Nederlands.
6. Press Select () to save the selection.
7. Press Cancel () to return to Standby mode.















2.2.1.3.4 Power Save Mode

The Power Save mode allows your printer to reduce power consumption when it is not in actual use. You can turn this mode on by selecting the length of time for which the printer waits after a job is printed before it switches to a reduced power state.

1. Press Menu ().
2. Press Scroll ( to ) to highlight Settings and press Select ().
3. Press Scroll ( to ) to highlight Setup and press Select ().
4. Press Scroll ( to ) to highlight Power Save and press Select ().
5. Press Scroll ( to ) to display the time settings you want.
The available options are 5, 10, 15, 30, 60 and 120(minutes).
6. Press Select () to save the selection.
7. Press Cancel () to return to Standby mode.

2.2.1.3.5 Changing the font setting

Your machine has preset the font for your region or country. If you want to change the font which you prefer or set the font under special condition such as the DOS environment, you can change the font setting as follows:

1. Press Menu ().
2. Press Scroll ( to ) to highlight Emulation and press Select ().
3. Press Scroll ( to ) to highlight Setup and press Select ().
4. Press Scroll ( to ) to highlight PCL and press Select ().
5. Press Scroll ( to ) to access the required value.
6. Press Select () to save the selection.
7. Press Cancel () to return to Standby mode.

NOTE: Following information shows the proper font list for corresponding languages.

Russian: CP868, Cyrillic

Hebrew: 15Q, 8H, 0H (Israel only)

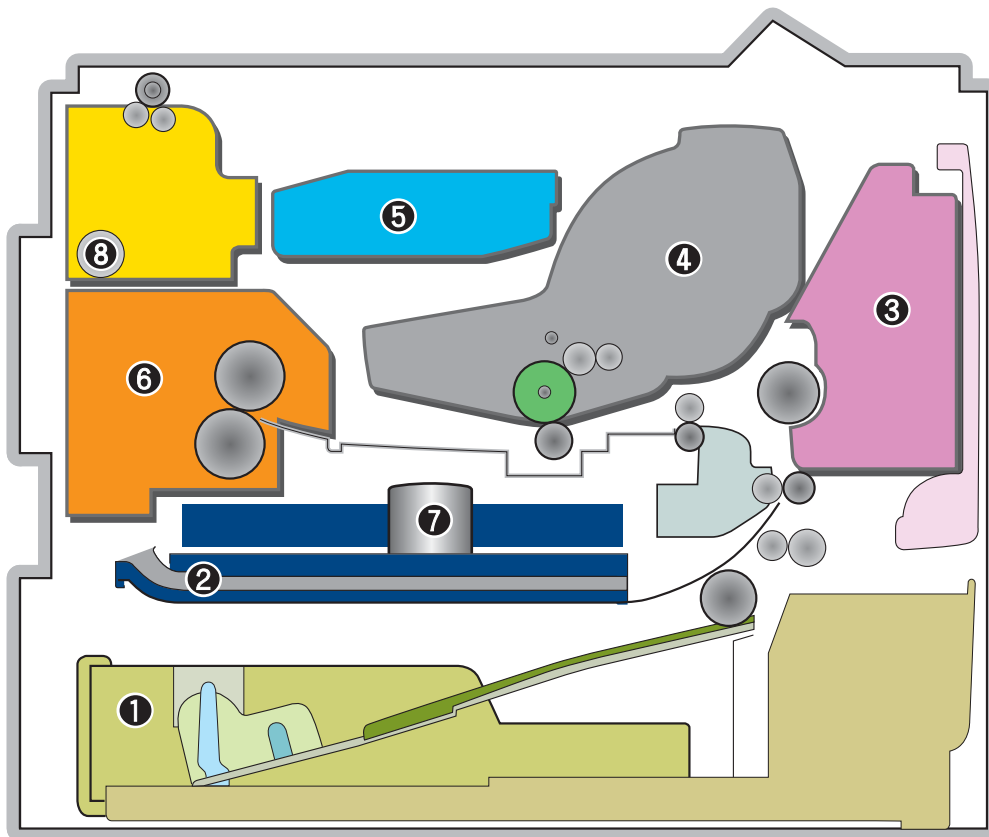
Greek: GREEK, PC737

Arabic & Farsi: ARABIC8, WINARABIC, PC864, FARSI, ISOARABIC.

2.2.2 System Layout

Dell 5330dn is consisted of the Engine parts and F/W, and said engine parts is consisted of the mechanical parts comprising Frame, Feeding, Developing, Driving, Transferring, Fusing, Cabinet and H/W comprising the main control board, power board, operation panel, PC Interface.

- In Dell 5330dn, the main controller is consisted of ASIC(500MHz) parts, Memory parts, Engine Interface parts and it functions as Bus Control, I/O Handling, drivers & PC Interface by CPU. Memory Access supports 32bit Operation, and Program Memory 32MB and Working Memory as well.
- In Dell 5330dn, the paper path is consisted of 500 sheets Cassette containing friction Pad, pickup-roller, feed-roller for functioning as registration, Earth-transfer for guiding the transfer inlet, Guide-Tr for guiding sheets between transferring and fixing, Fuser, Exit Assy.
- In Dell 5330dn, the driving device is consisted of BLDC motor, 55 Bi-Polar 2-2 Phase motor, OPC, Pick-up, Feed, Gear-Train connected with Mounting member



- | | |
|---------------------|-------------------|
| ① Cassette | ② Duplex |
| ③ MPF | ④ Print Cartridge |
| ⑤ LSU | ⑥ Fuser |
| ⑦ SMPS & HVPS Board | ⑧ Duplex Solenoid |

2.2.2.1 Feeding

It consists of a basic cassette, an MP tray for supplying different types of media : envelope, label special paper, duplex unit, and parts related to paper transferring.

1) Separation method

Separate it from the friction pad mounted to the center of the cassette and apply retard roller that uses a spring clutch. A feed roller uses an electronic clutch to control driving power.

2) Basic cassette

It takes a center loading method and applies 'friction pad separating method.' It means that there is a paper sensor, but a paper size is detected after detecting the first paper by software.

Both the side guide and the rear guide can be adjusted for various types of papers from A5 to legal size paper.

It has a paper existence sensing function (Capacity: 500 sheets of general paper), paper arranging function, various size papers accepting function, SCF paper path function, and displaying function of paper remaining amount.

In the front side, there is a paper level indicator.

3) Pick-up roller

It has functions such as a paper pickup function, driving control function, paper feeding function, and removing electronic static function.

4) Retard roller

It takes an arrangement method which uses a stopper roller and a weight without electric actuator.

It has paper separating function, driving control function, and multi feeding prevention function.

5) Registration roller

It has a paper arranging function, paper transferring function, paper detecting function, jam removing function, and so on.

6) MPtray

It has a paper arranging function, paper transferring function, jam removing function, and so on.

It uses rubbing pad method to feed 100 sheets of general papers and 10 envelopes.

It is possible to extend to 300mm for accepting a legal size paper.

7) Duplex unit

It has paper transferring function, paper guide function, jam removing function, paper sensing function, and main board supporting function.

It is designed for basic attachment, and the duplex feeding takes a side feeding method. Usable papers are A4, letter, and legal size paper.

For removing a jam occurred in a front part, it is designed to open a cassette and a guide.

It is designed to open a rear cover to remove a jam in a rear part.

If a face up tray is open, the duplex option cannot be used.

8) SCF (Second Cassette Feeder)

It is the same method with the main cassette, and the capacity is 500 sheets.

It has a separate driving mechanism. It is designed for a common use with a main cassette.

2.2.2.2 Transfer

It consists of a PTL (Pre-transfer Lamp) and a transfer roller. A PTL sheds light on an OPC drum, lowers an electric potential of an OPC drum's surface, and improves the efficiency of the transfer.

A transfer roller transfers toner on an OPC drum to the paper.

Life span: Print over 150,000 sheets (In 16~27°C)

2.2.2.3 Driver Ass'y

By driving the motor, the system takes power. It consists of a main motor for feeding fuser and duplex reverse turn, and a deve-motor for a print cartridge.

- Main Motor : DC 24V, Rated RPM : 1604rpm
- Deve Motor : DC 24V, Rated RPM : 1424 rpm

2.2.2.4 Fuser

It is consisted of a heat lamp, heat roller, pressure roller, thermistor and thermostat. It sticks the toner on a paper by heat and pressure to complete the printing job.

- E-coil Heater : 1,300 Watt 50W

1) Thermostat

When a heat lamp is overheated, a Thermostat cuts off the main power to prevent over-heating.

- Non-Contact type Thermostat

2) Heat roller

The heat roller transfers the heat from the e-coil to apply a heat on the paper. The surface of a heat roller is coated with Teflon, so toner does not stick to the surface.

3) Pressure roller

A pressure roller mounted under a heat roller is made of a silicon resin, and the surface also is coated with Teflon. When a paper passes between a heat roller and a pressure roller, toner adheres to the surface of a paper permanently.

4) Items for safety

Protecting device for overheating

- 1st protection device: Hardware cuts off when overheated
- 2nd protection device: Software cuts off when overheated
- 3rd protection device: Thermostat cuts off main power.

Safety device

- A fuser power is cut off when a front cover is opened
- Maintain a temperature of fuser cover's surface under 80°C for user, and attach a caution label at where customer can see easily when customer open a rear cover.

2.2.2.5 LSU (Laser Scanner Unit)

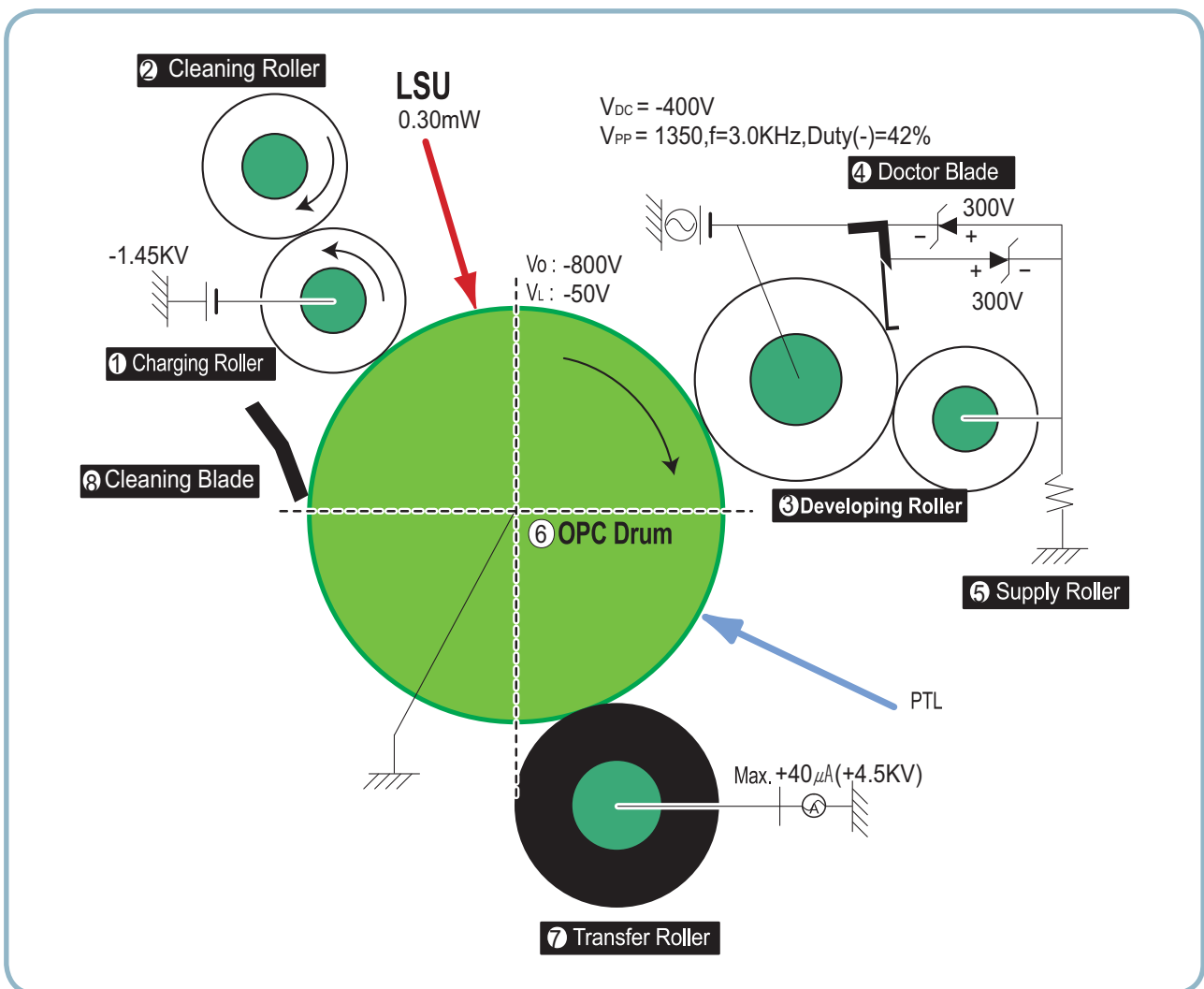
It is the core part of the LBP which switches from the video data received to the controller to the electrostatic latent image on the OPC drum by controlling laser beam, exposing OPC drum, and turning principle of polygon mirror. The OPC drum is turned with the paper feeding speed. The /HSYNC signal is created when the laser beam from LSU reaches the end of the polygon mirror, and the signal is sent to the controller.

The controller detects the /HSYNC signal to adjust the vertical line of the image on paper. In other words, after the /HSYNC signal is detected, the image data is sent to the LSU to adjust the left margin on paper. The one side of the polygon mirror is one line for scanning.

2.2.2.6 Print Cartridge

By using the electronic photo process, it creates a visual image. In the print cartridge, the OPC unit and the print cartridge unit are in a body. The OPC unit has OPC drum and charging roller, and the print cartridge unit has toner, supply roller, developing roller, and blade (Doctor blade)

- Developing Method: Non-contacting method
- Toner : Non magnetic 1 component pulverized type toner
- The life span of toner : 10,000 or 20,000 pages (LSA Pattern/A4 standard)
- Toner remaining amount detecting sensor : Yes
- OPC Cleaning : Cleaning blade type
- Management of disusable toner : Collect the toner by using Cleaning Blade
- OPC Drum protecting Shutter : Yes
- Classifying device for print cartridge : ID is classified by CRUM.



< Print Cartridge Layout >

2.2.3 Engine H/W Specifications

2.2.3.1 Dell 5330dn (PCL) Main Board

The Engine Board and the Controller Board are in one united board, and it is consisted of CPU part and print part in functional aspect. The CPU is functioned as the bus control, O/O handling, drivers, and PC interface. The main board sends the Current Image by Video data to the LSU and manages the conduct of Electro photo graphy for printing. It is consisted of the circuits of the motor (paper feed, pass) driving, clutch driving, pre-transfer lamp driving, current driving, and fan driving.

The signals from the paper feed jam sensor and paper empty sensor are directly inputted to the main board.

1) ASIC : Marvell Feroceon 2850 ARM Compatible (I-Cache: 32KB, D-Cache-32KB)

- 64-bit RISC embedded processor core
- Dual bus architecture for bus traffic distribution
- SDRAMC : 32 Bits Dual mode DDR-II, 200MHz
 - 4 Banks (Up to 256MB per Bank)
- Device Controller : Boot Flash 1 Bank (Up to 128MB)
- IOC : Device/NOR Flash 3 Banks (Up to 128MB per Bank)
- DMAC : 4 Channels
- IEEE1284 compliant parallel port interface
- Printer Video Controller for LBP engines
- No Graphic Execution Unit and Image processor
- No Codec (Encoding / Decoding)
- Fully Hardware Rotator, Scaler and Halftoner support
- Printer Video Controller Interface for LBP engines :
 - PCI Controller : 32Bits, 66MHz (PCI) / 133MHz (PCI-X))
- NAND Flash Controller
- Engine
- USB 2.0 Interface with Embedded USB 2.0 PHY
- Gigabit Ethernet Controller
- Package : 496pins PBGA
- Power : 1.2V(Core), 3.3V(IO) power operation
- Speed 500MHz core(ARM11 Compatible) operation, 166MHz bus operation

2) Memory

- Nand Flash Memory : It stores System Program and downloads the System Program through PC Interface, and in case of model for export it compresses the PCL font, then stores it.
 - Capacity : 32M Byte
 - Access Time : 70 nsec
- DDR SDRAM : It is used as Swath Buffer, System Working Memory Area, etc. when printing. It stores Font List, compressed into Flash memory, on DRAM and uses it as PCL font in case of model for export.
 - Capacity : 256MByte(Basic), up to 768Mbyte (User Option)
 - Type : DDR-II SDRAM 200MHz , 32bit

3) Others

The Option PBA can be mounted for supporting the serial communication.

4) Sensor Input Circuit

Paper Empty Sensing

The Paper empty sensor (Photo Interruptor) on the engine board informs the state of paper to CPU whether it is empty or not with operation of the actuator.

When cassette is empty, it detects the fact by reading the D0 Bit of CPU, and then informs the fact by selecting the second LED(yellow) among the panel LEDs.

MP Sensing

By operation of Actuator on the frame, MP Sensor (Photo interruptor) on the engine board informs the state of paper to CPU whether it is empty or not. It reads the D0 Bit of CPU for recognizing paper in MP, and paper is fed from MP if there is.

Paper Feeding/Width Print Cartridge Sensing

When paper passes the actuator (feed sensor part), it detects the signal of Photo interrupter, informs the paper feeding state to CPU, and then sprays the image data after certain time.

If it doesn't detect the feed sensor within 1sec. after paper is fed, paper Jam0 (CPU #_) is occurred (Red and Yellow will be turned on among the OP panel LEDs), and the fact whether the developer is inserted or not is detected with the same principle. After the developer is mounted, the actuator is operated. The signal from the photo interrupter is detected when it is passing the actuator of the sensor part. That is the developer ID sensing.

Paper Exit Sensing

It detects paper state whether paper gets out from the set with operation of exit sensor on the engine board and actuator on the frame. Paper detects the on/off time of exit sensor by reading D2 Bit of CPU, and the normal operation or jam information is informed to the CPU.

The paper JAM2 is informed. (Red, Yellow LED will be turned on among the OP panel LEDs)

Cover Open Sensing

The Cover open sensor is located on the front cover. After the front cover is opened, +24V (DC fan, Solenoid, Main Motor, Polygon motor part of LSU and HVPS), which is supplied to the each unit, is cut off. The cover-open sensing is operated by the D0 bit of CPU, and the developer ID sensing is operated by D7 bit of CPU. In case, the red LED among OP panel LEDs will be ON for informing the facts to user.

DC FAN / SOLENOID Driving

It is driven by transistor and controlled by D6 bit of CPU.

When it is high, the fan is driving by turning on the TR, and it is off when the sleep mode is selected. There are two solenoids, and they are driven by paper pick-up and MP signal. It is turned on or off by D4 bit of CPU, and its driving time is 300ms. The diode protects the driving TR from the noise pulse, which is flown when the solenoid id de-energizing.

FAN Driving Circuit is driven by Transistor, and controlled by D6 Bit of

Motor Driving

The motor driving circuit is formed when the Driver IC is selected in the first place. The A3977 Motor Driver IC is used in this case. But, resistance Rs value of sensing and voltage value of the V reference can be changed by motor driving voltage value. The motor driving voltage is calculated with the following formula.

2.2.3.2 SMPS & HVPS board

The SMPS supplies DC Power to the System.

It takes 110V/220V and outputs the +5V, +24V to supply the power to the main board. The HVPS board creates the high voltage of THV/MHV/Supply/Dev and supplies it to the developer part for making best condition to display the image. The HVPS part takes the 24V and outputs the high voltage for THV/MHV/BIAS, and the outputted high voltage is supplied to the toner, OPC cartridge, and transfer roller.

1) HVPS (High Voltage Power Supply)

- Transfer Current
 - Input Current : 24 V DC \pm 15%
 - Output Current : MAX +40 μ A(+4.5KV) \pm 3%,(Duty Variavle)
-1 KV \pm 20% (when cleaning,200 M Ω)
 - Input contrast of the Current stability degree : under \pm 3 % (fluctuating input 21.6V~27.6V)
Loading contrast : \pm 3 % or less
 - Output Current Rising Time : 100 ms Max
 - Output Current Falling Time : 100 ms Max
 - Fluctuating transfer Current with environmental various : +1 μ A ~ 40 μ A(+400V~+4.5KV)
 - Environment Recognition Control Method : The THV-PWM ACTIVE is transfer active signal. It detects the resistance by recognizing the Current value, F/B, while permits the environmental recognition voltage.
 - Output Current Control Method : Transfer Output Current is outputted and controlled by changing Duty of THVPWM Signal.
- Charge Voltage (MHV)
 - Input Voltage : 24 V DC \pm 15%
 - Output Voltage : -1.1KV ~ -1.5KV DC \pm 50V
 - Output Voltage Rising Time : 50 ms Max
 - Output Voltage Falling Time : 50 ms Max
 - Output Loading range : 30 M Ω ~ 1000 M Ω
 - Output Control Signal(MHV-PWM) : CPU is HV output when PWM is Low
- Cleaning Voltage (THV-)
 - The (+) Transfer Voltage is not outputted because the THV PWM is controlled with high.
 - The (-) Transfer Voltage is outputted because the THV-Enable Signal is controlled with low
 - The output fluctuation range is big because there is no Feedback control.
- Developing Voltage (DEV)
 - Input Voltage : 24 V DC \pm 15%
 - Output Voltage : AC+DC Vp-p 550V ~ 2.4KV
 - Output Voltage Fluctuation range: PWM Control
 - Output Voltage Rising Time : 50 ms Max
 - Output Voltage Falling Time : 50 ms Max
 - Output Load : About 68pF (Standard load)
 - Output Control Signal : DEV AC-PWM / DEV AC-Vpp PWM /DEV AC-ON / DEV DC PWM
- Supply
 - Output Voltage : Vp-p 550V ~ 2.4KV (ZENER using, DEV)
 - Output Voltage Rising Time : 50 ms Max
 - Output Voltage Falling Time : 50 ms Max
 - Output Load : About 68pF (Standard load)
 - Output Control Signal : DEV AC-PWM / DEV AC-Vpp PWM /DEV AC-ON / DEV DC PWM

- Fuser Voltage

- Input Voltage : 24 V DC \pm 15%
- Output Voltage : 0V ~ 1KV DC \pm 3%
- Output Voltage Rising Time : 50 ms Max
- Output Voltage Falling Time : 50 ms Max
- Output Loading range : 10 M Ω ~ 100 M Ω
- Output Control Signal(Fuser PWM) : CPU is HV output when PWM is Low

2) SMPS (Switching Mode Power Supply)

It is the power source of entire system. It is assembled by an independent module, so it is possible to use for common use. It is mounted at the bottom of the set.

It is consisted of the SMPS part, which supplies the DC power for driving the system, and the AC heater control part, which supplies the power to fuser. SMPS has two output channels. Which are 5V and +24V.

- AC Input

- Input Rated Voltage : AC 220V - 240V AC 120V / AC 220V(EXP version)
- Input Voltage fluctuating range : AC 198V - 264V AC 90V - 135V / AC 198V - 264V(EXP version)
- Rated Frequency : 50-60 Hz
- Frequency Fluctuating range : 47 - 63 Hz
- Input Current : Under 6Arms / 2.4Arms (But, the status when lamp is off or rated voltage is inputted/outputted)

- Rated Output Power

| NO | ITEM | CH1 | CH2 |
|----|---|---------------------------------|---------------------------------|
| 1 | CHANNEL NAME | +5V | +24.0V |
| 2 | CONNECTOR PIN | CON 3 5V PIN: 13,15,17,19 | CON3 24V PIN 1,3,5,7,9 |
| 3 | Rated Output | +5V \pm 5% (4.75~5.25V) | +24V \pm 10% (21.6~26.4V) |
| 4 | Max. Output Current | 4.0 A | 7.5A |
| 5 | Peak Loading Current | 4.4 A | 8.0A |
| 6 | RIPPLE NOISE Voltage | Under 100mVp-p | Under 500mVp-p |
| 7 | Maximum output | 20W | 180W |
| 8 | Peak output | 22W | 192W |
| 9 | Protection for loading shortage and overflowing current | 4.5A~6.5A shutdown or Fuse open | 8.0A ~11A shutdown or Fuse open |

- Length of Power Cord : 1830±50mm
- Power Switch : Use
- Feature
 - Insulating Resistance : 100MΩ or more (at DC 500V)
 - Insulating revisiting pressure : Must be no problem within 1 min. (at 1500Vac,10mA)
 - Leaking Current : under 0.75mA
 - Running Current : under 30A PEAK (AT 25℃, COLD START)
under 50A PEAK (In other conditions)
 - Rising Time : within 2Sec
 - Falling Time : over 20ms
 - Surge : Bi-Wave 6KV-12ohm (Common) 3KV -2ohm(Normal)
- Environment Condition
 - Operating temperature range : 0℃ ~ 50℃
 - Maintaining temperature range : -25℃ ~ 85℃
 - Preserving Humidity Condition : 30% ~ 90% RH
 - Operating atmospheric pressure range :

3) FUSER AC POWER CONTROL (with 2 Lamp)

Fuser(HEAT LAMP) gets heat from AC power. The AV power controls the switch with the Triac, a semiconductor switch. The 'ON/OFF control' is operated when the gate of the Triac is turned on/off by Photo triac (insulating part).

In other words, the AC control part is passive circuit, so it turns the heater on/off with taking signal from engine control part.

When the 'HEATER ON' signal is turned on at engine, the LED of U3,U4(Photo Triac) takes the voltage and flashes. From the flashing light, the Triac part (light receiving part) takes the voltage, and the voltage is supplied to the gate of Triac and flows into the Triac. As a result, the AC current flows in the heat lamp, and heat is occurred.

On the other hand, when the signal is off, the U3, U4 is off, the voltage is cut off at the gate of Triac, the Triac becomes off, and then the heat lamp is turned off.

- Triac (Q02, Q03) feature :16A, 800V SWITCHING
- Phototriac Coupler (U3,U4)
 - Turn On If Current : 15mA ~ 50mA(Design :16mA)
 - High Repetive Peak Off State Voltage : Min 800V

2.2.4 Engine F/W

1) Feeding

If feeding from a cassette, the drive of the pickup roller is controlled by controlling the solenoid. The on/off of the solenoid is controlled by controlling the general output port or the external output port. If feeding from a manual feeder, decide to insert the paper according to the operation of the manual sensor, and by driving the main motor, insert the paper in front of the feed sensor. While paper moves, occurrence of Jam is judged as below.

| ITEM | Description |
|-------------|--|
| JAM 0 | <ul style="list-style-type: none"> - After picking up, paper cannot be entered due to paper is not fed. - After picking up, paper entered but it cannot reach to the feed sensor in certain time due to slip, etc. - After picking up, if the feed sensor is not on, re-pick up. After re-picking up, if the feed sensor is not on after certain time, it is JAM 0. <ul style="list-style-type: none"> * <i>It is a status that the leading edge of the paper doesn't pass the feed sensor.</i> - Even though the paper reaches to the feed sensor, the feed sensor doesn't be ON. <ul style="list-style-type: none"> * <i>It is a status that the leading edge of the paper already passes the feed sensor.</i> |
| JAM 1 | <ul style="list-style-type: none"> - After the leading edge of the paper passes the feed sensor, the trailing edge of the paper cannot pass the feed sensor after a certain time. (The feed sensor cannot be OFF) - After the leading edge of the paper passes the feed sensor, the paper cannot reach the exit sensor after certain time. (The exit sensor cannot be ON) <ul style="list-style-type: none"> * <i>The paper exists between the feed sensor and the exit sensor.</i> |
| JAM 2 | <ul style="list-style-type: none"> - After the trailing edge of the paper passes the feed sensor, the paper cannot pass the exit sensor after certain time. |
| DUPLEX JAM0 | <ul style="list-style-type: none"> - After the trailing edge of the paper passes the exit sensor, the leading edge of the paper cannot reach the duplex sensor after certain time. |
| DUPLEX JAM1 | <ul style="list-style-type: none"> - After the leading edge of the paper passes the duplex sensor, the leading edge of the paper cannot reach the feed sensor after certain time. |

2) Driver

By gearing, the main motor drives the rollers such as feeding roller, developing roller, fuser roller, and exiting roller. The step motor is controlled for the such acceleration section and steady section. In the initial stage of the motor run, appoint the acceleration section to prevent the step-out of the motor. It is controlled by the A 3977 motor driver IC. The step signal and the enable signal are sent to make the phase for driving the motor in CPU.

3) Transfer

The charging voltage, developing voltage and the transfer voltage are controlled by PWM (Pulse Width Modulation). The each output voltage is changeable due to the PWM duty. The transfer voltage admitted when the paper passes the transfer roller is decided by environment recognition. The resistance value of the transfer roller is changed due to the surrounding environment or the environment of the set, and the voltage value, which changes due to the environments, is changed through AD converter. The voltage value for impressing to the transfer roller is decided by the changed value. Each voltage value is controlled according to 3.3.4.2 Timing Chart.

4) Fusing

The temperature change of the heat roller's surface is changed to the resistance value through the thermistor. By converting the voltage value, which impressed to the resistance, to the digital value through the AD converter, the temperature is decided. The AC power is controller by comparing the target temperature to the value from the thermistor. If the value from the thermistor is out of controlling range while controlling the fusing, the error stated in the below table occurs.

5) Lamp Method

| Error | Description |
|-----------------|--|
| OPEN HEAT ERROR | - When warming up, it has been lower than 90℃ over 45 seconds |
| LOW HEAT ERROR | - Standby It has been lower than 130℃ over 10 seconds - Printing After first page, : It has been 30℃ lower than the fixed fusing temperature over 7 seconds. |
| OVER HEAT ERROR | 1. It has been higher than 230℃ over 3 seconds 2. It has been higher than 220℃ over 20 seconds 3. It has been 10℃ higher than the fixed fusing temperature over 3 minutes. |

6) LSU

The LSU is consisted of the LD (Laser Diode) and the polygon motor control. When the printing signal occurs, it turns on the LD and drives the polygon motor. When the detector detects the beam, Hsync occurs. When the polygon motor speed becomes strady, Lready occurs. If two conditions are satisfied, the status are not satisfied, the error shown in below occurs

| Error Type | Description | Remark |
|---------------------|--|---------------|
| Polygon Motor Error | Whenthe polygon motor speed doesn't become steady | Error display |
| Hsync Error | The polygon motor speed is steady but the Hsync is not generated | Error display |

3. Disassembly and Reassembly

3.1 General Precautions on Disassembly

When you disassemble and reassemble components, you must use extreme caution. The close proximity of cables to moving parts makes proper routing a must.

If components are removed, any cables disturbed by the procedure must be restored as close as possible to their original positions. Before removing any component from the machine, note the cable routing that will be affected.

Whenever servicing the machine, you must perform as follows:

1. Check to verify that documents are not stored in memory.
2. Be sure to remove the toner cartridge before you disassemble parts.
3. Unplug the power cord.
4. Use a flat and clean surface.
5. Replace only with authorized components.
6. Do not force plastic-material components.
7. Make sure all components are in their proper position.

Releasing Plastic Latches

Many of the parts are held in place with plastic latches. The latches break easily; release them carefully.

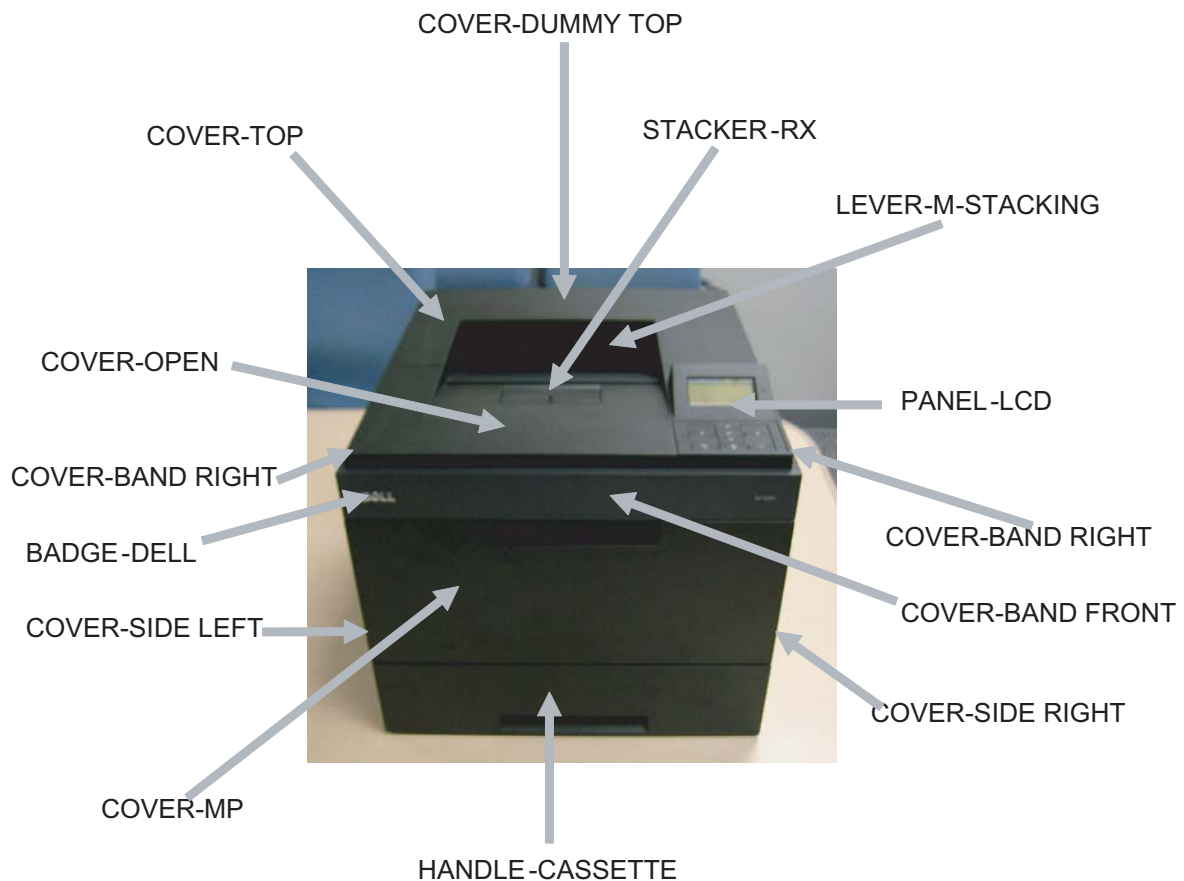
To remove such parts, press the hook end of the latch away from the part to which it is latched.



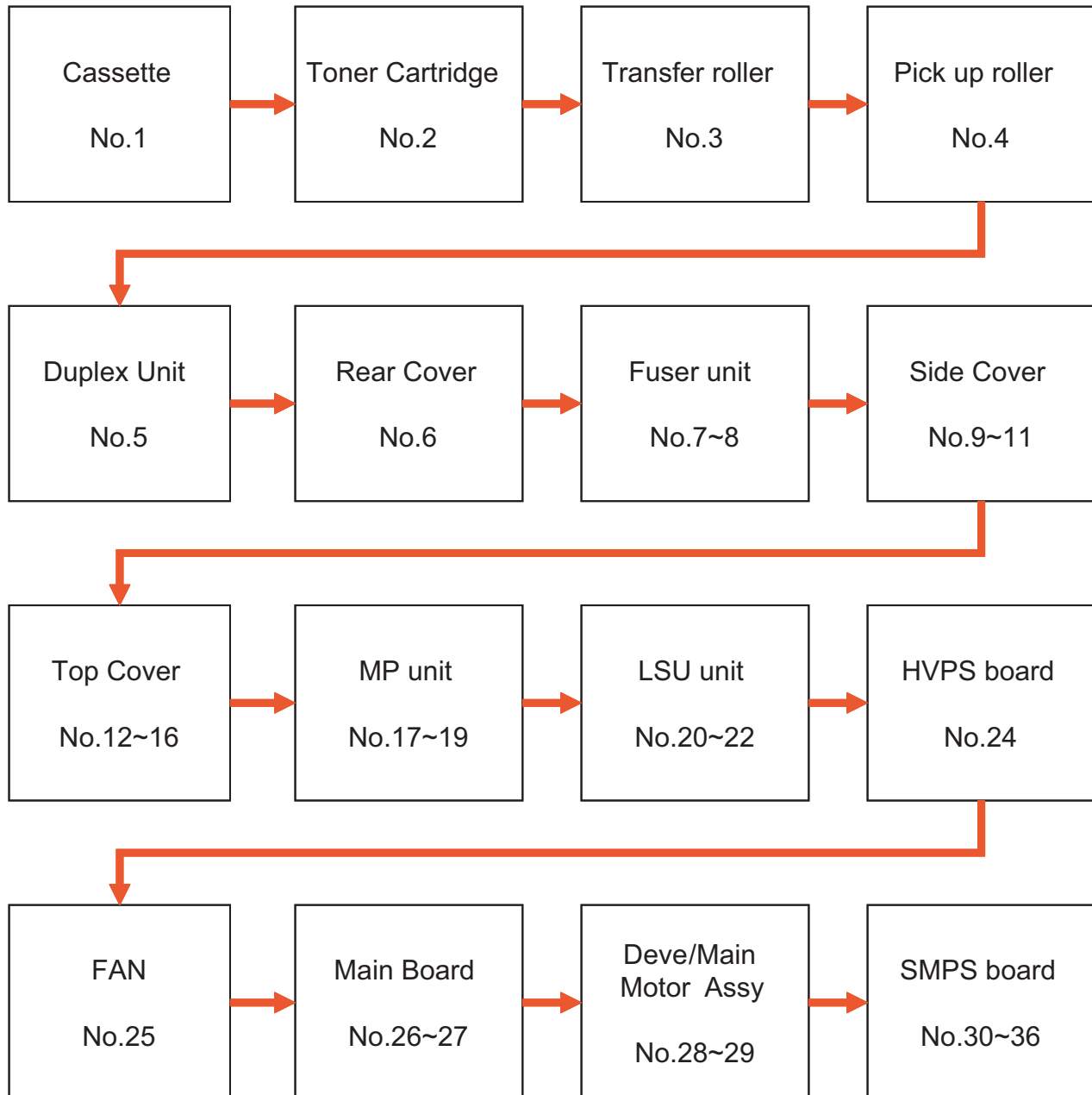
3.2 General Disassembly

- The description of disassembly in this chapter is listed according to the disassembly procedures. When replacing some parts, consult the disassembly map on next page.

< Front View >



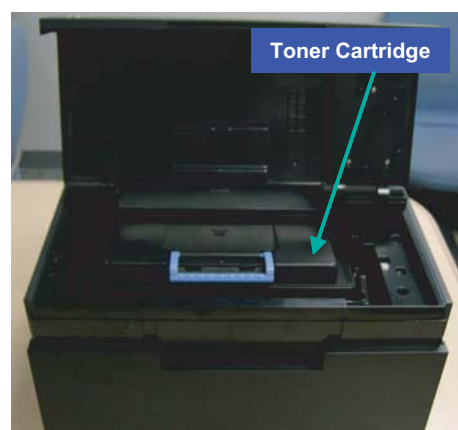
■ Disassembly Map



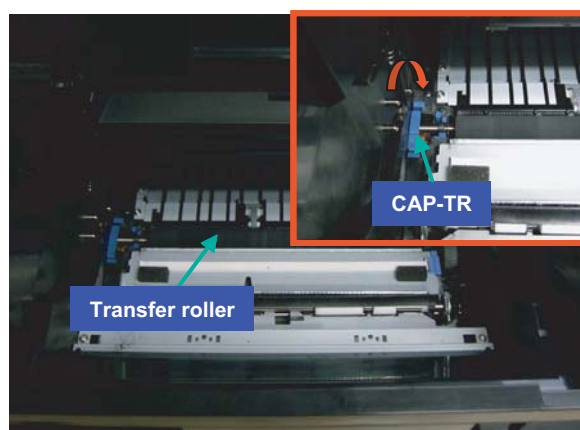
1. Remove the Cassette Unit



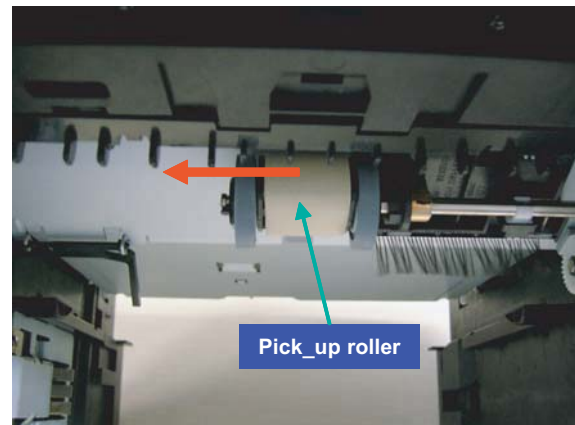
2. Open the Cover-Open and remove the Toner cartridge.



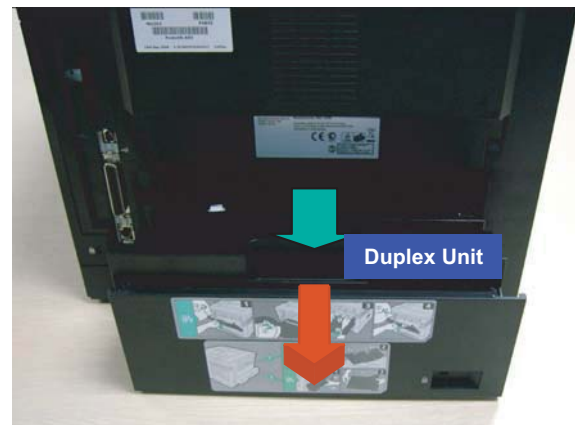
3. Remove the CAP-TR at left side of the Transfer roller. And remove the Transfer roller.



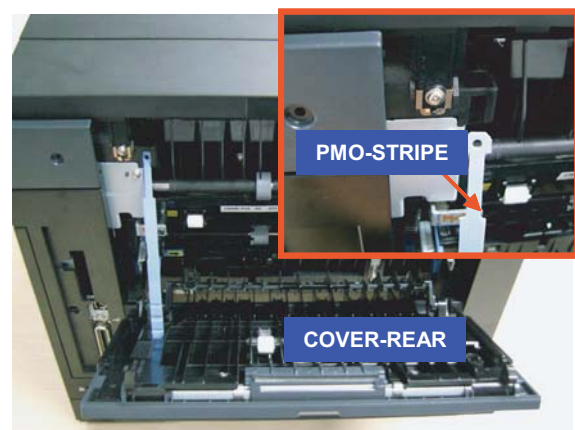
4. Remove the Pick_up roller.



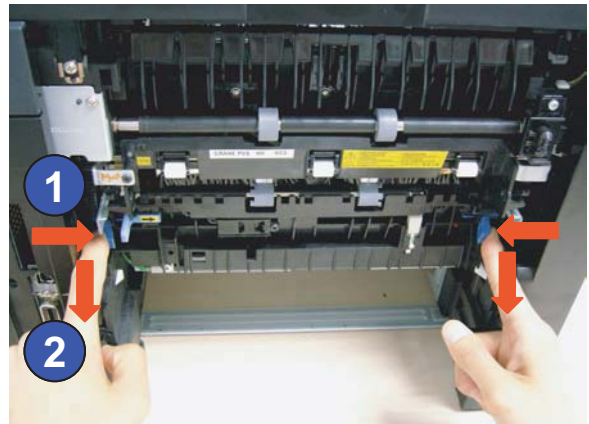
5. Remove the DUPLEX unit.



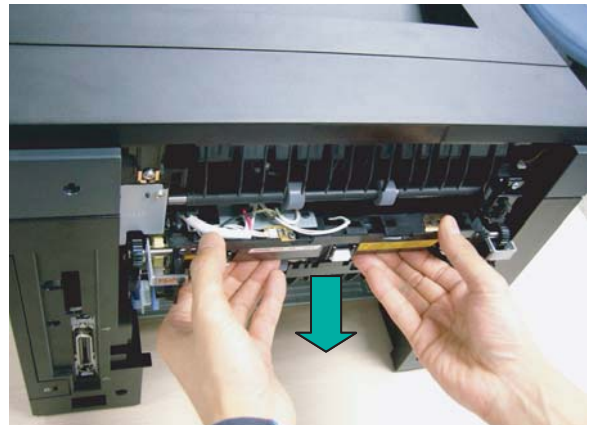
6. Open the COVER-REAR. Remove the COVER-REAR after remove the PMO-Stripe.



7. Pull the Locker of the Fuser unit to the direction of arrow.

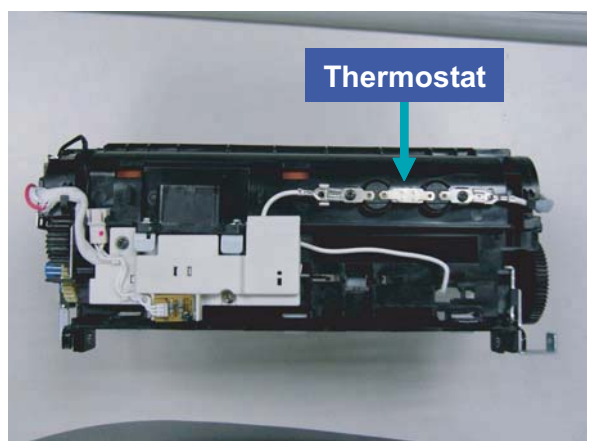


8. Take out the Fuser unit.

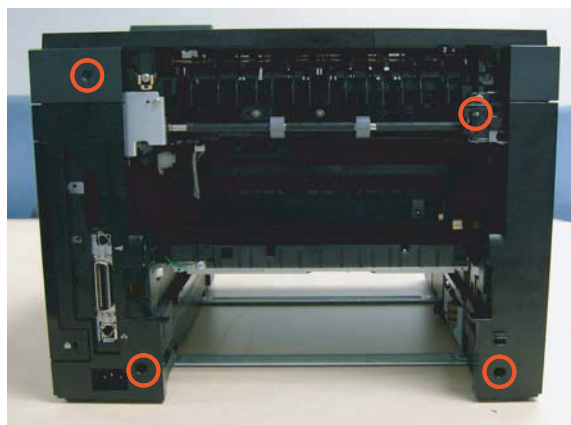


Note

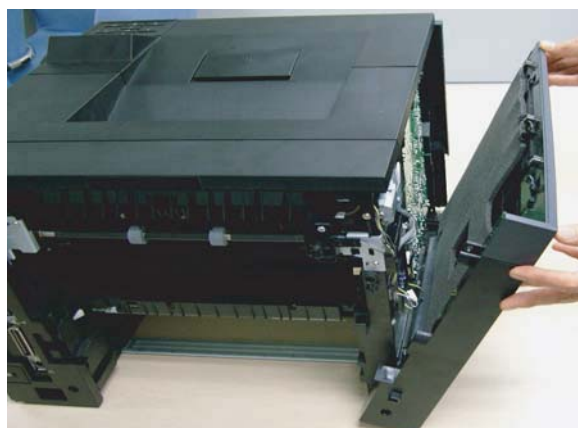
If replacing the sub item of the Fuser unit, Consult the Exploded view.



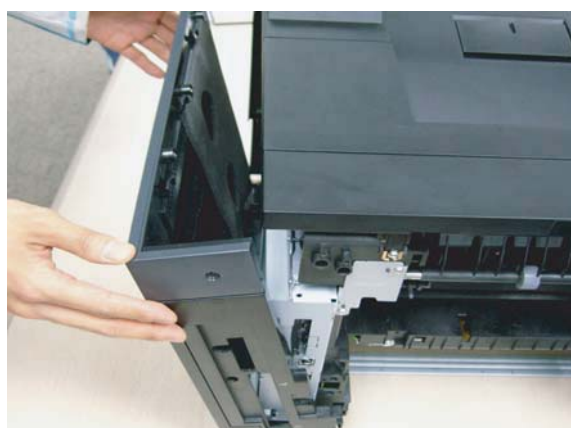
9. To remove the COVER-SIDE (left/right), remove the 4 screws on rear side.



10. Remove the COVER-SIDE LEFT.



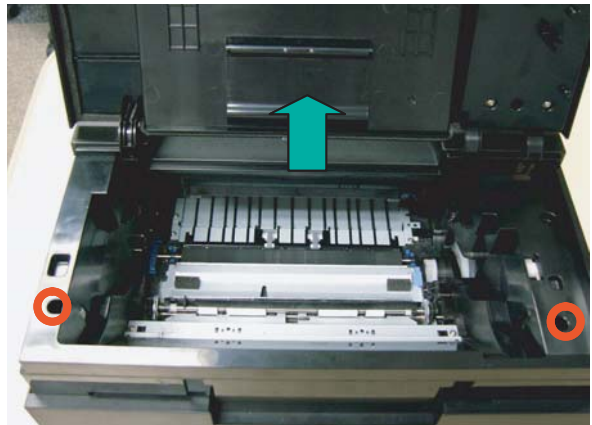
11. Remove the COVER-SIDE RIGHT.



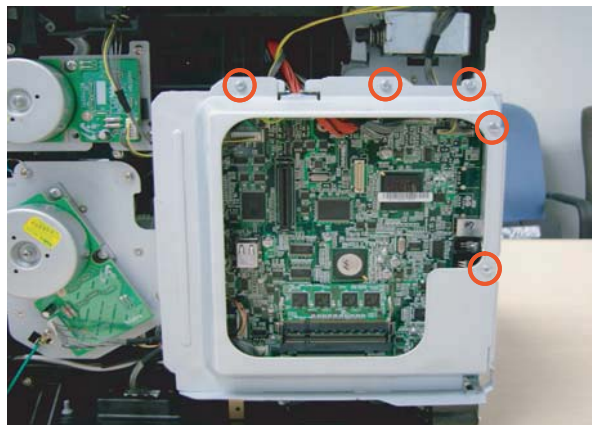
12. To remove the COVER-TOP, first remove the 2 screws.



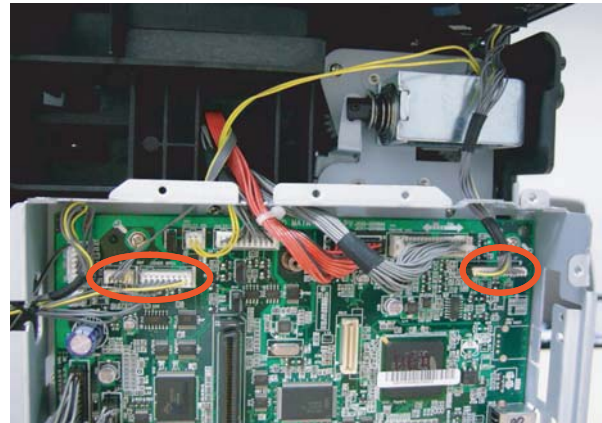
13. Open the COVER-TOP and unfasten the 2 screws.



14. Remove the 5 screws securing Controller shield Ass'y. And remove the COVER-SHIELD.



15. Unplug the harness from the Main board.

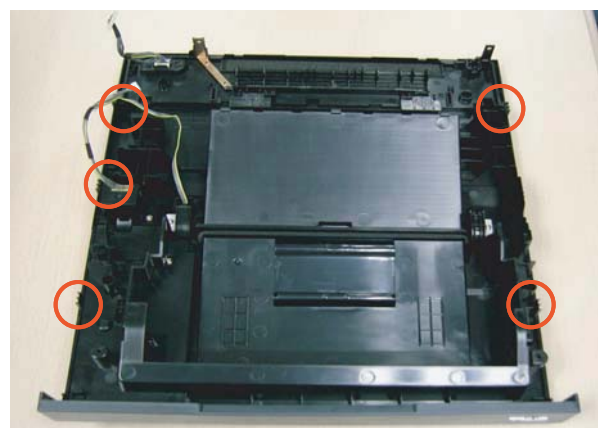


16. Pull the two hooks in both side and disassemble the Cover-Top.

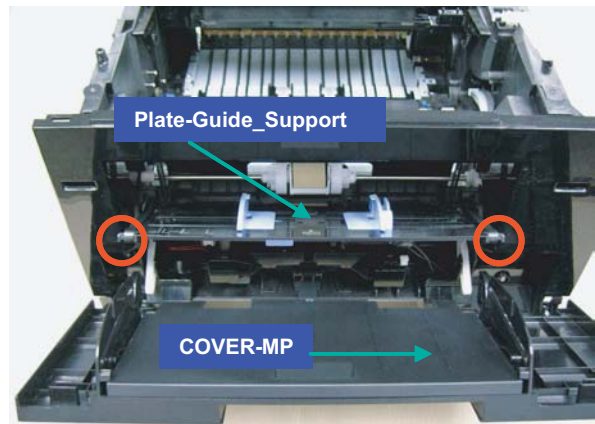


Note

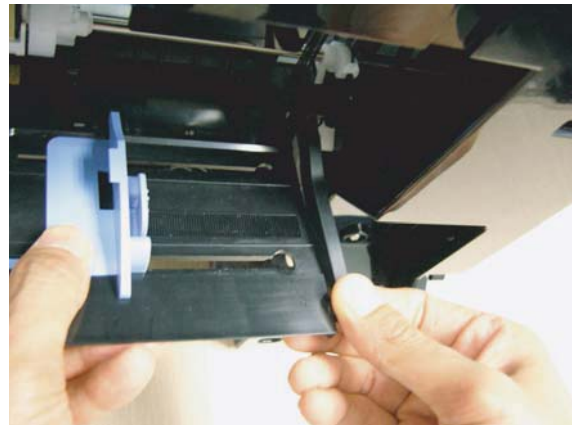
When removing the COVER-TOP, be careful not to break the 5 hinges.



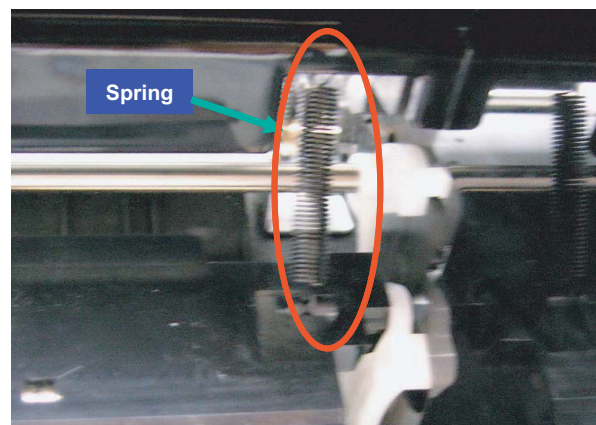
17. To remove the MP-Unit, open the COVER-MP. And dislodge the Cover-MP from Arm-MP(L/R).



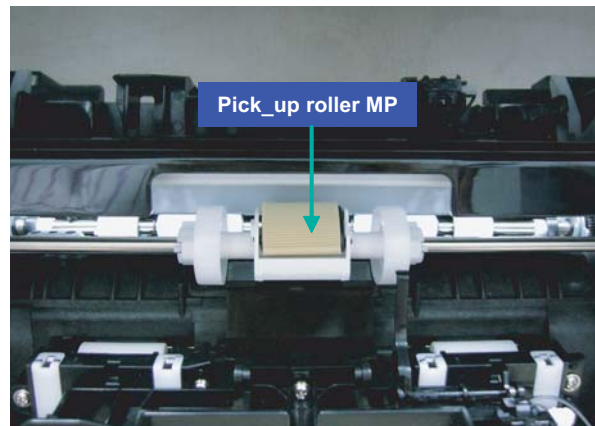
18. Remove the Arm-MP (L/R).



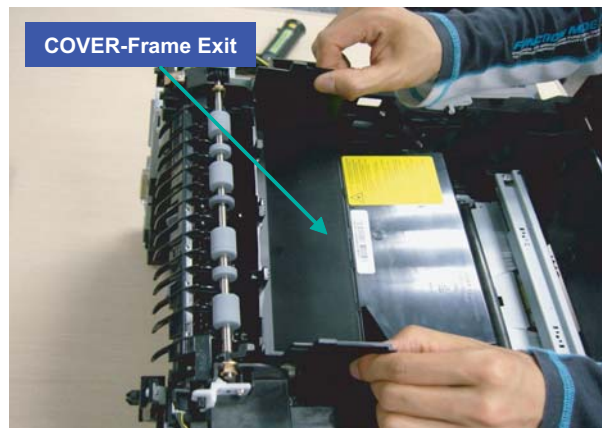
19. Remove the Spring and disassemble the Plate-Guide_Support.



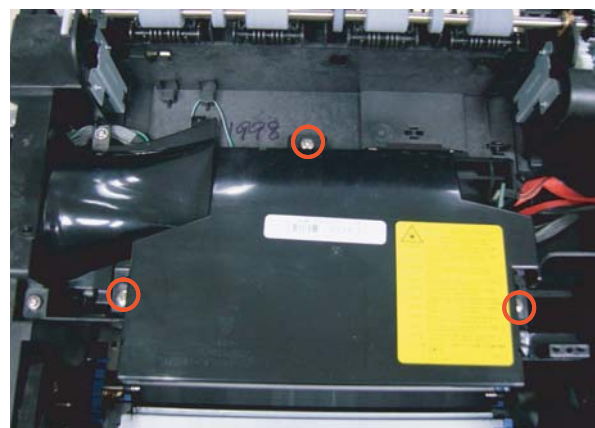
※ If necessary, remove the Pick_up roller MP.
MP. (Life span: 150K)



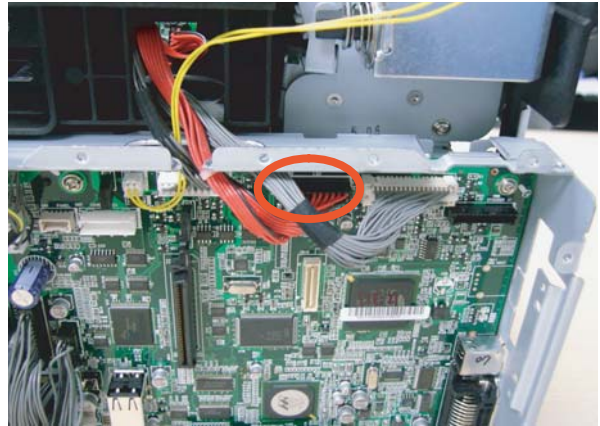
20. To remove the LSU-Unit, remove the
COVER-Frame Exit.



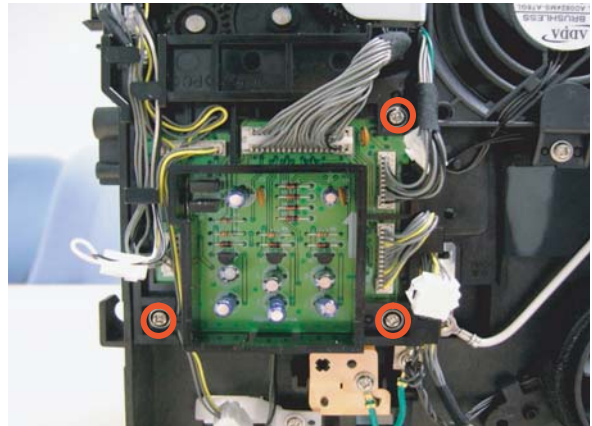
21. Remove the 3 screws.



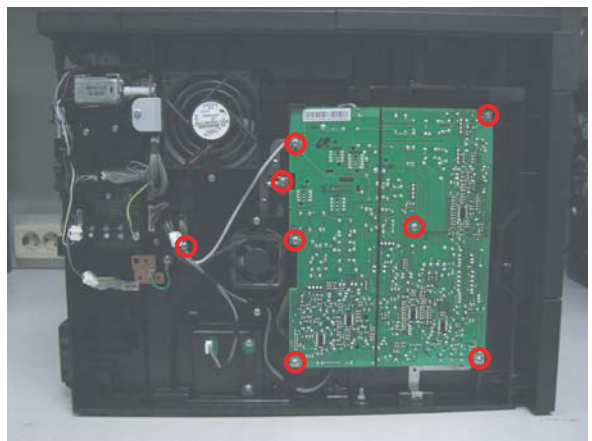
22. Unplug the harness from the Main board.
Remove the LSU unit.



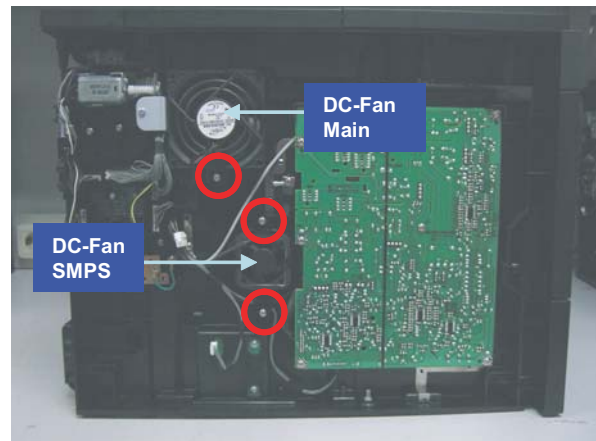
23. Remove the FPCPS(fuser press control power) board after remove the 3 screws.



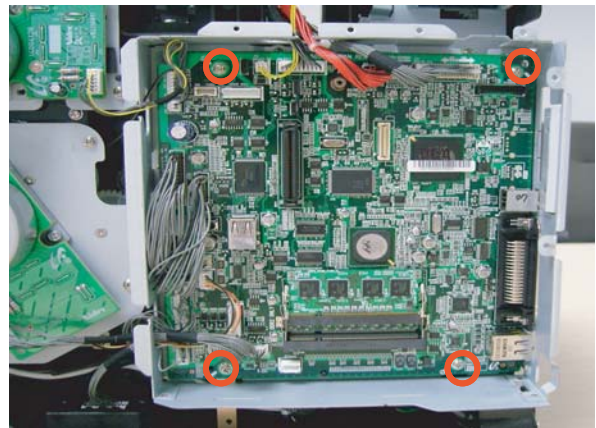
24. Remove the HVPS board after remove the 8 screws and all harness.



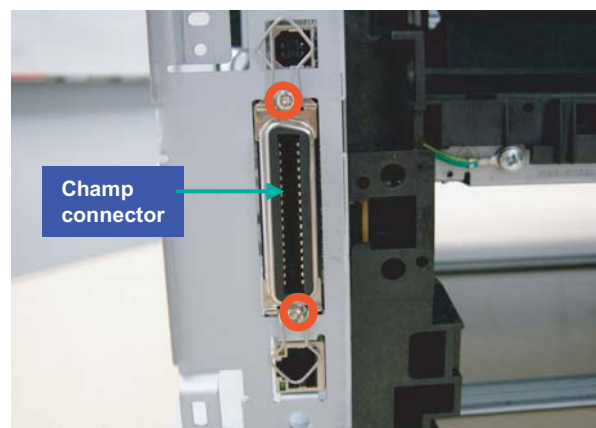
25. Remove the 3 screws. And remove the Main Fan & SMPS Fan (DC-Fan).



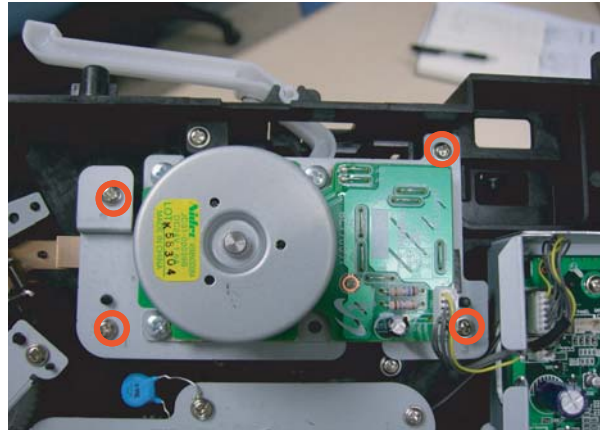
26. To remove the Main board, remove the 4 screws and all harness from Engine-Shield.



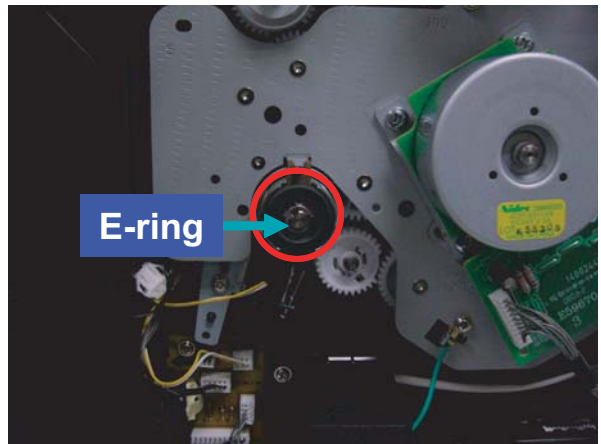
27. Remove the 2 screw securing the Champ connector. And remove the Main board.



28. Remove the DEVE motor Ass'y after remove the 4 screws.



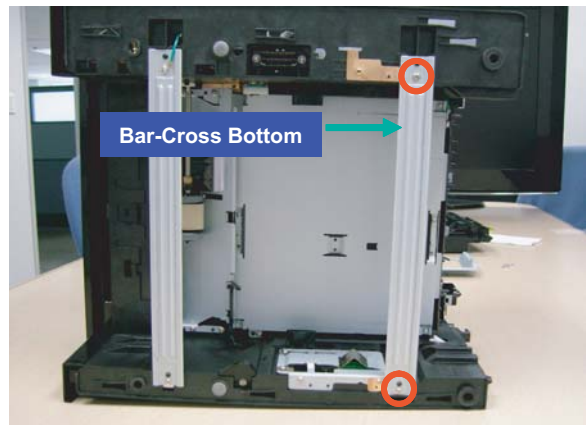
29. Remove the clutch after remove the E-ring



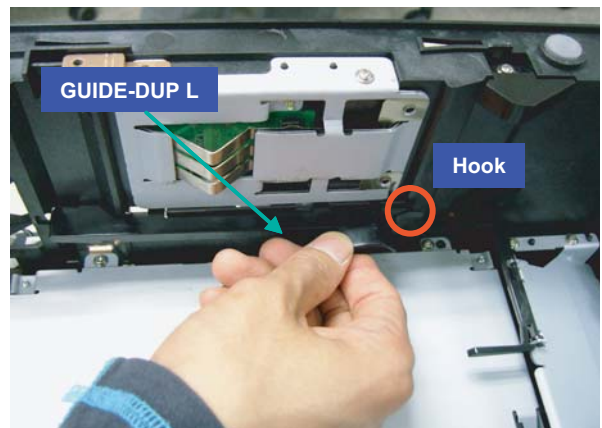
30. Remove the Main motor Ass'y after remove the 5 screws.



31. To remove SMPS board, turn upside and down the set. Remove the bar-cross bottom after remove the 2 screws.



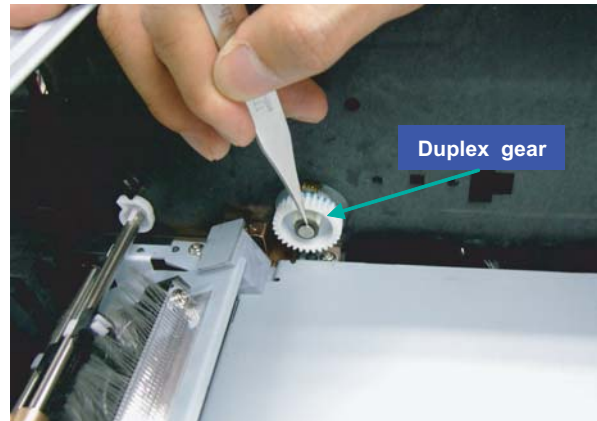
32. Remove the GUIDE-DUP_R/L at both side of the Shield-SMPS.



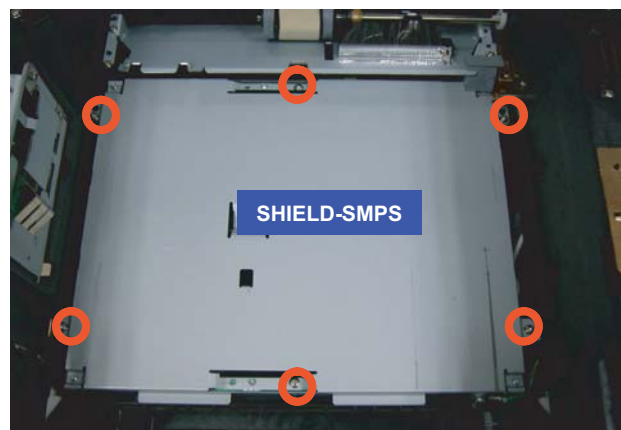
33. Remove the actuator-empty.



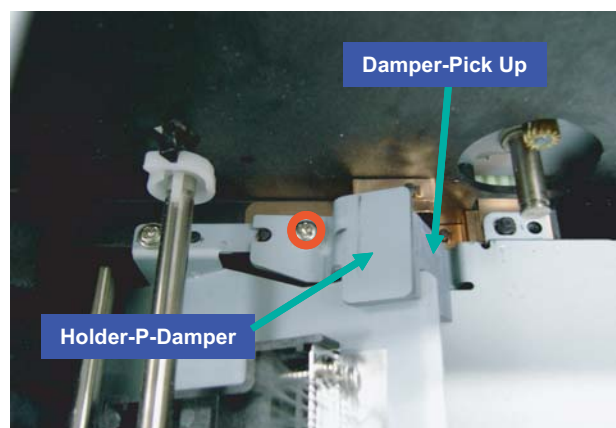
34. Remove the washer with any tool (ex. tweezers). And remove the duplex gear.



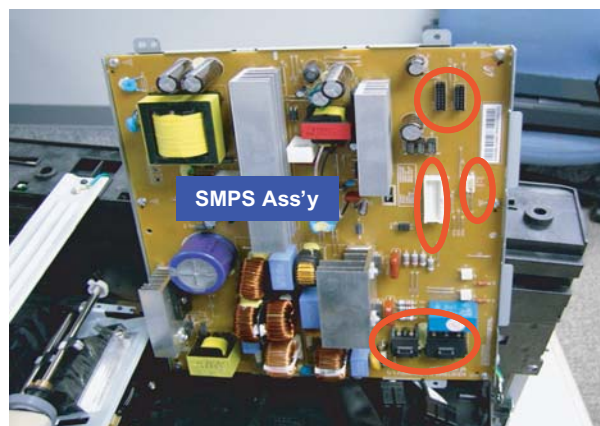
35. Remove the 6 screws securing the SHIELD-SMPS.



36. Remove the screw from the edge of SHIELD-SMPS. And disassemble the Holder-P-Damper and Damper-Pick Up.



37. Lift the SMPS Ass'y up and unplug the harness.



4. Adjustment and Troubleshooting

4.1 Alignment and Adjustments

This chapter describes the main functions for service, such as the product maintenance method, the test output related to maintenance and repair, Jam removing method, and so on.
It includes the contents of manual.

4.1.1 Tech mode

4.1.1.1 Entrance method for Tech mode

In order to enter the tech mode, the entering method should be special because this mode is developed for engineers related, not for end users.

• **Usage**

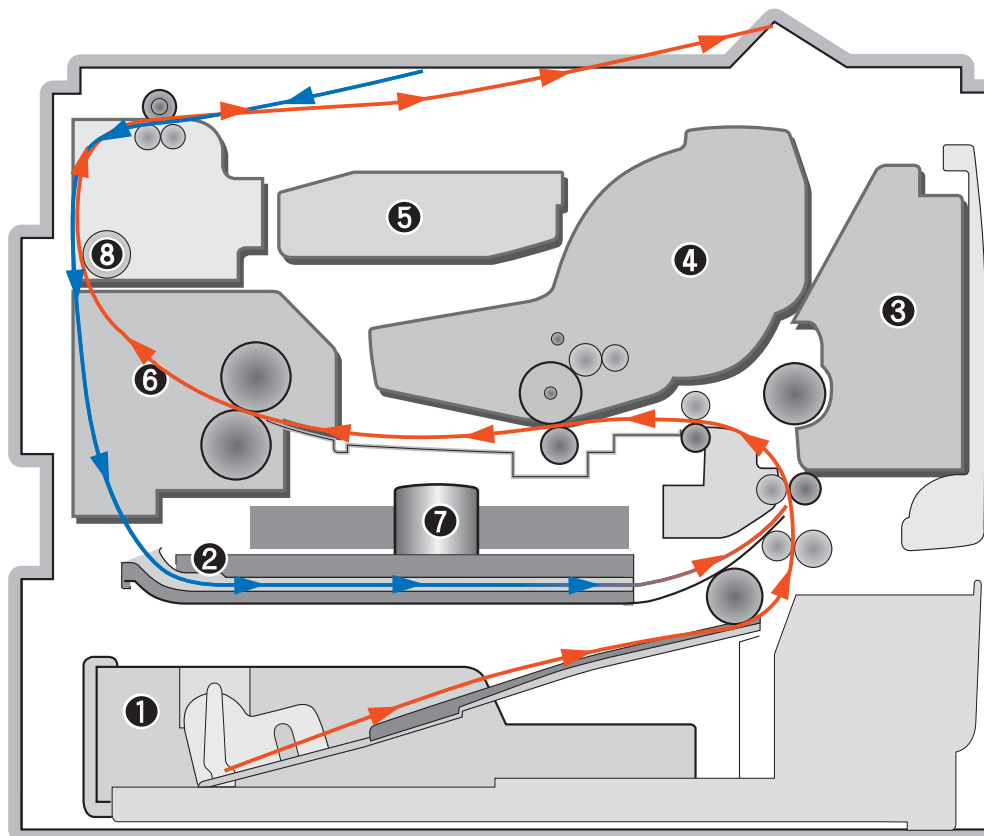
1. Check printer is powered on.
2. Wait until the printer becomes a ready mode.
3. Press Menu -> Up -> Left -> Ok -> Right -> Cancel -> Menu -> Tech menu.
4. Follow a usage for a function you would like to use.

* The procedure and content above can be changed according to the situation.

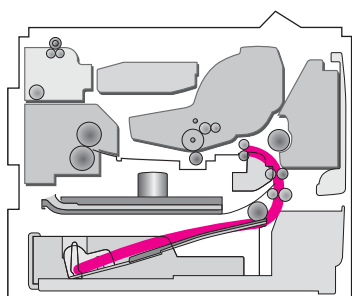
4.1.1.2 Tech menu map

| 1st level | 2nd Level | 3rd level | 4th level | 5th level | 6th level |
|--------------|-----------------|-------------|-------------|------------------|-------------|
| Data Setup | HDD Format | | | | |
| | Margin | Top Margin | [-40~40] 0* | | |
| | | Left Margin | [-40~40] 0* | | |
| | | MPF | Simplex | Top Margin | [-30~30] 0* |
| | | | | Left Margin | [-30~30] 0* |
| | | | Duplex | Even Top Margin | [-30~30] 0* |
| | | | | Even Side Margin | [-30~30] 0* |
| | | | | Odd Top Margin | [-30~30] 0* |
| | | | | Odd Side Margin | [-30~30] 0* |
| | | <Tray x> | Simplex | Top Margin | [-30~30] 0* |
| | | | | Left Margin | [-30~30] 0* |
| | | | Duplex | Even Top Margin | [-30~30] 0* |
| | | | | Even Side Margin | [-30~30] 0* |
| | | | | Odd Top Margin | [-30~30] 0* |
| | | | | Odd Side Margin | [-30~30] 0* |
| | Clear All Mem. | | | | |
| | Clear Fuser Cnt | | | | |
| | Printer Footer. | | | | |
| Machine Test | Graphic Error. | | | | |
| | Service Tag | | | | |
| | TEST USB HOST | | | | |
| Reports | Supplies Info | | | | |
| EDC Mode | NVM Read Write | | | | |
| | NVM Initialise | | | | |
| | Test Ruotines | | | | |

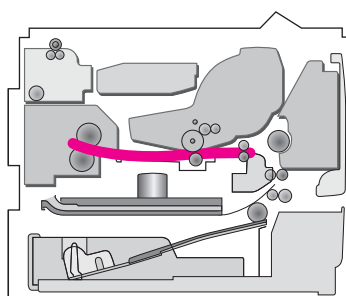
4.1.2 Paper Path



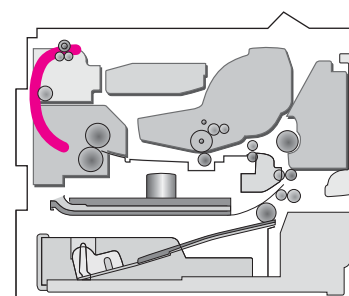
- | | |
|---------------------|-------------------|
| ① Cassette | ② Duplex |
| ③ MPF | ④ Print Cartridge |
| ⑤ LSU | ⑥ Fuser |
| ⑦ SMPS & HVPS Board | ⑧ Duplex Solenoid |



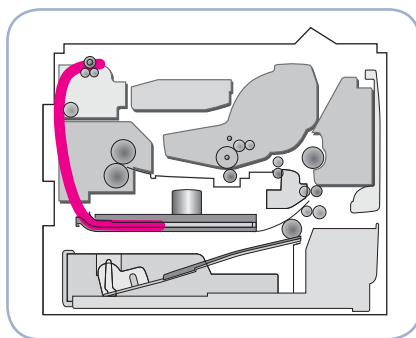
<Jam 0>



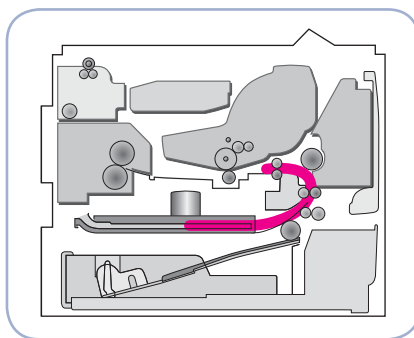
<Jam 1>



<Jam 2>



<Jam Duplex 1>



<Jam Duplex 0>

• Simplex

- 1) A paper is fed from a cassette or MPF by a printing order.
- 2) The fed paper passes a paper feeding sensor.
 - If the sensor does not operate after feeding the paper, the Jam0 occurs.
- 3) The paper passes a paper exit sensor, and it comes out from a machine.
 - If the trailing edge of the paper does not come out from a machine after the leading edge of the paper passes the sensor, then certain time later, a Jam2 occurs.

• Duplex

- 1) A paper is fed from a cassette or MPF by a printing order.
- 2) The fed paper passes a paper feeding sensor.
 - If the sensor does not operate after feeding the paper, a Jam0 occurs.
- 3) The paper that passes a paper exit sensor takes several printing processes, and moves to a paper exit sensor.
 - If the sensor does not operate after certain time, a Jam 1 occurs.
- 4) If the paper does not discharge until the paper passes an exit roller and a Roller-Exit-F/Down, a Jam 2 occurs.
- 5) The printing paper starts to be printed for duplex only by reversing rotation by an exit motor. The printing paper enters to a machine through an exit roller, and reaches to duplex sensor.
 - If the printing paper cannot reach to the duplex sensor after certain time, a duplex Jam 1 occurs.
- 6) The printing paper that passes the duplex sensor reaches to a feed sensor again and a printing operation is tried over again.
 - If the printing paper cannot reach to a feed sensor after certain time later, a duplex Jam 2 occurs.

4.1.2.1 Clearing Jams in the Paper Tray

When a paper jam occurs, Paper Jam appears on the display. Refer to the table below to locate and clear the paper jam.

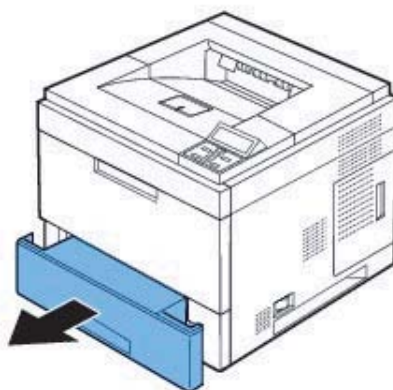
| Operator Panel Message | Location of Jam |
|--------------------------------|---|
| Paper Jam 0 Open/Close Door | Around the toner cartridge area |
| MP Tray Paper Jam 0 | In the feeding area of the multi-purpose feeder |
| Tray [x] Paper Jam 0 | Paper Feed Jam (tray 1 or optional trays) |
| Paper Jam 1 Open/Close Door | In the paper exit area or around the toner cartridge area |

| Operator Panel Message | Location of Jam |
|---------------------------------|--|
| Paper Jam 2 Check Inside | Paper Exit Jam |
| Duplex Jam 0 Check Inside | In the duplex unit |
| Duplex Jam 1 Open/Close Door | Between the duplex unit and fuser area |

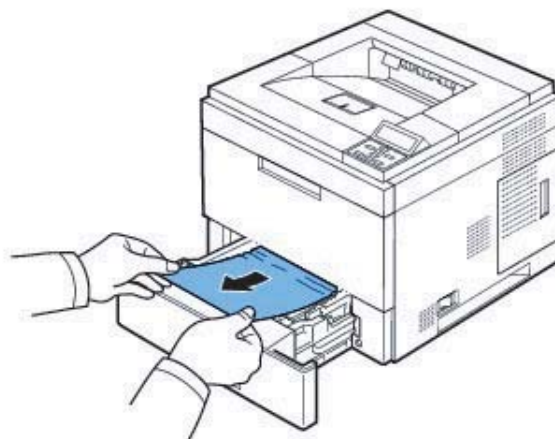
To avoid tearing the paper, pull the jammed paper out gently and slowly. Follow the steps below to clear the jam.

Paper Feed Jam (tray 1)

1. Pull paper tray 1 open.



2. Remove the jammed paper by gently pulling right out. Ensure that all of the paper is fully aligned in tray 1.

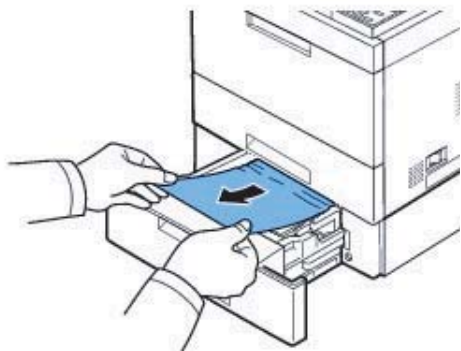


If you cannot see the paper or the paper does not move when pulled, check the fuser area. For more information, see "Around the toner cartridge".

3. Insert paper tray 1 into the printer until it snaps into place.
Printing automatically resumes.

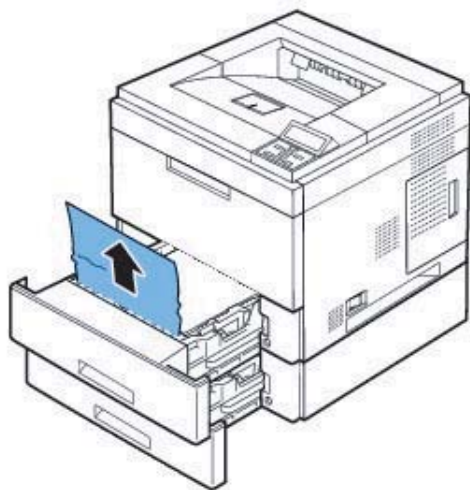
Paper Feed Jam (optional trays)

1. Pull optional tray open.
2. Remove the jammed paper from the p



If you cannot see the paper in this area or the paper does not move when pulled, go to the next step.

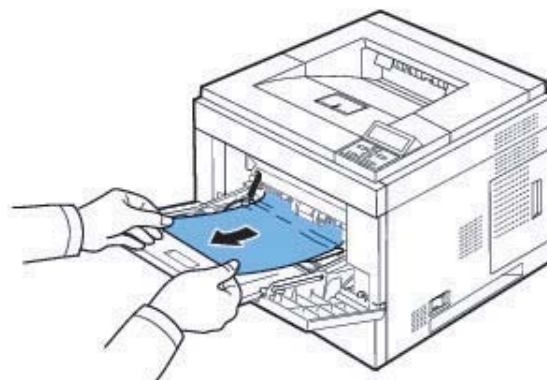
3. Pull the tray 1 half-way out.
4. Pull the paper straight up and out.



5. Insert the trays back into the printer.
Printing automatically resumes.

Multi-purpose Feeder Jam

1. If the paper is not feeding properly, pull the paper out of the printer

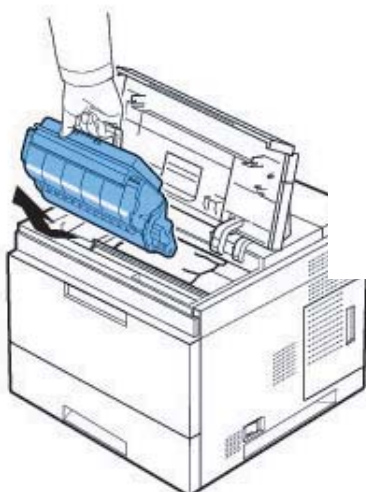


2. Open and close the top cover to resume printing.

Around the print cartridge

Note : The fuser area is hot. Take care removing paper from the printer.

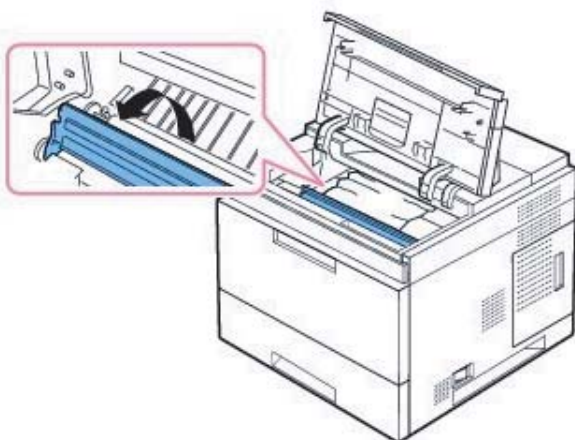
1. Open the top cover and pull the toner out. Set it on a clean flat surface.



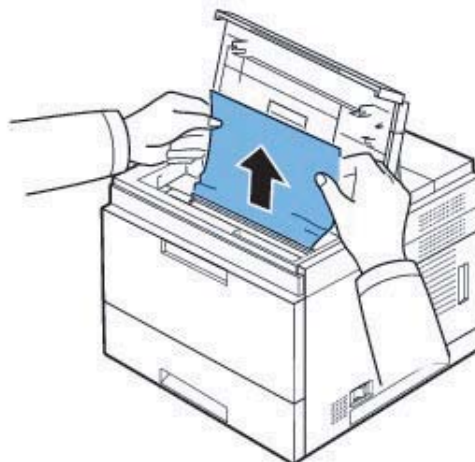
Caution :

- To prevent damage, do not expose the toner cartridge to light for more than a few minutes.
- Do not touch the green underside of the toner cartridge. Use the handle on the cartridge to avoid touching this area.

2. Carefully lift up the guide feed.

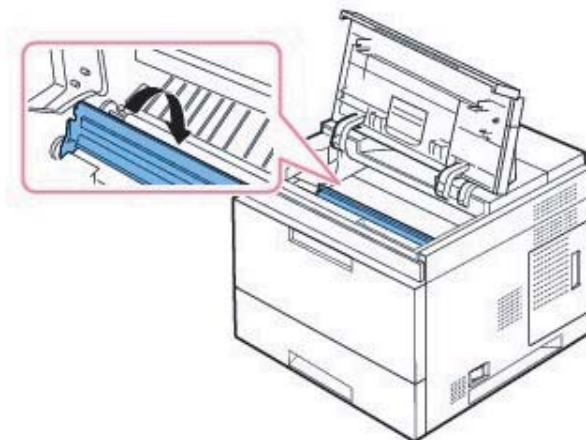


3. Remove the jammed paper by gently pulling it straight out.



If you cannot see the paper in this area or if there is any resistance removing the paper, stop pulling and go to the paper exit area. For more information, see "In the paper exit area".

4. Flip down the guide feed.

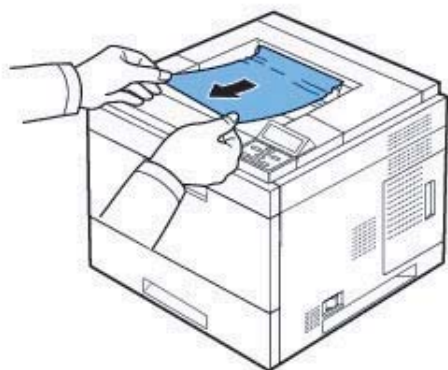


5. Reinsert the toner cartridge and close the top cover. Printing automatically resumes.

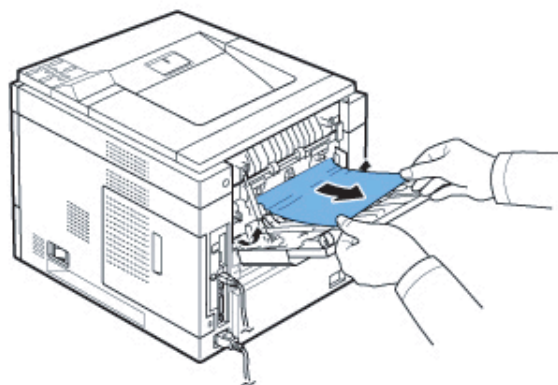
Note : If it is difficult to reinstall the toner cartridge, ensure that the feed guide has been flipped back down into position.

In the Paper Exit Area

1. Open and close the top cover. The paper automatically ejected from the printer
2. Gently pull the paper out of the output tray

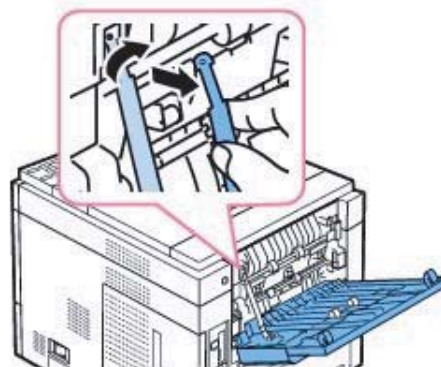


3. If you cannot see the paper in this area or there is any resistance removing the paper, pulling and go to the next step.
4. Open the rear door.
5. Then gently pull the paper straight out.

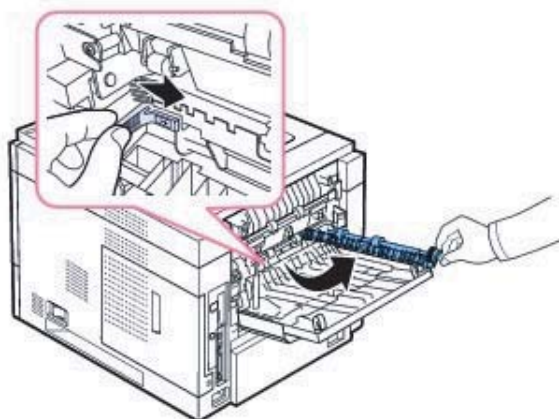


If you still do not see the paper, go to the next step.

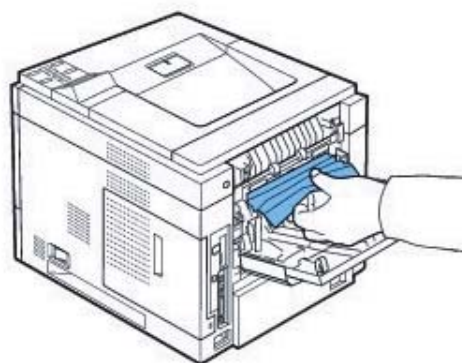
6. Pull the rear door strap.



Pushing the fuser lever to the right, open the rear door.



8. Pull the jammed paper out.



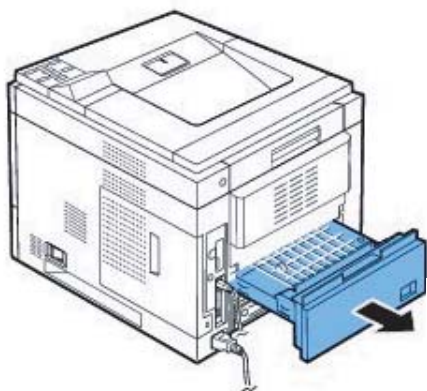
9. Return the fuser lever to original position and insert the rear door connector in the printer.
10. Return the pressure levers to their original position and close the rear door. Printing automatically resumes.

In the Duplex Unit Area

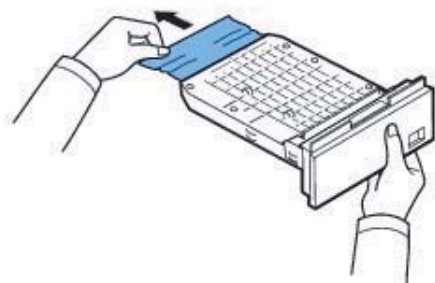
If the the duplex unit is not inserted correctly, paper jam may occur. Ensure that the duplex unit is inserted correctly.

Duplex jam 0

1. Pull the duplex unit out of the printer.



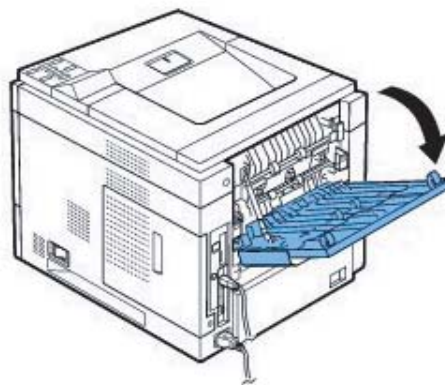
2. Locate the paper and remove it



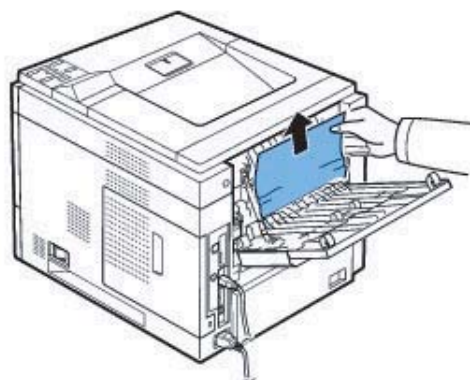
3. Insert the duplex unit into the slot.
4. Open and close the top cover. The printer will resume printing.

Duplex jam 1

1. Open the rear door.



2. Gently pull the jammed paper straight up.



Close the rear door.

4. Open and close the top cover. The printer will resume printing.

4.1.3 Printing a reports

This product has the several sample patterns for maintenance. With the sample patterns, check the existence of the abnormality. The patterns help to regularly maintain the product.

4.1.3.1 Reports

Your printer comes with a set of Reports that helps you solve printing problems and obtain the best results from your printer. You can access these pages from the printer's front panel.

To print reports:

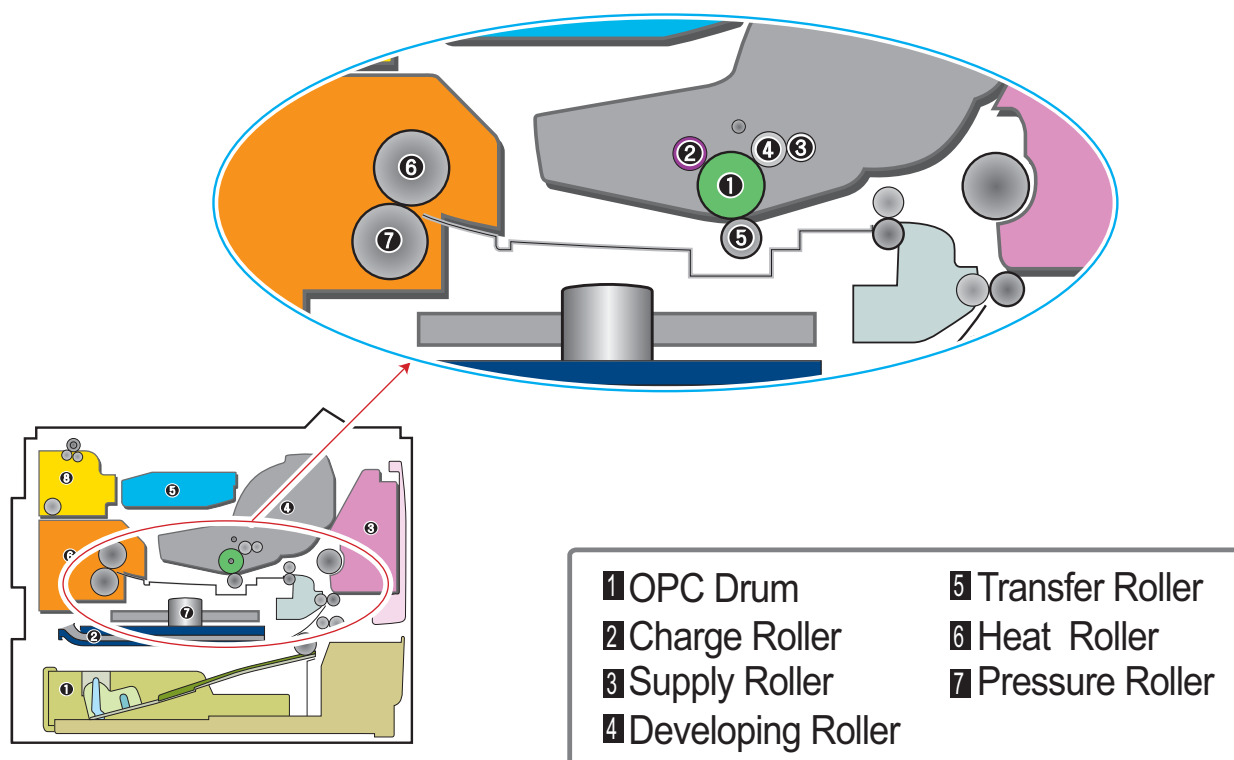
1. On the printer's front panel, press the Menu button, then press the Enter button to select reports.
2. Select reports, then press the Enter button.
 - ① Slect key(◀/▶), to find reports menu.
 - ② Press Confirm Key, switch to reports menu.
 - ③ Press Confirm key, the printing.
- * 3. Select the appropriate information page, then press the Enter button to print.

Note : Print the "Menu Map" to see other information pages available for printing.

4.1.4 Periodic Defective Image

If the delinquent image regularly occurs in the printed-paper, it is due to delinquent or damaged roller. Refer to the table in below and check the condition of the roller.

| No | Roller | Defective image | Typical defect |
|----|-------------------|-----------------|---|
| 1 | OPC Drum | 94.4 mm | White and Black Spots |
| 2 | Charge Roller | 38.3 mm | Black Spot and Periodic Band |
| 3 | Supply Roller | 59.1 mm | Periodic Band by little difference of density |
| 4 | Developing Roller | 50.3 mm | White Spot, Horizontal black band |
| 5 | Transfer Roller | 55.9 mm | Ghost, Damaged Image by abnormal transfer |
| 6 | Heat Roller | 125.6 mm | Black Spots or Vertical Black Band |
| 7 | Pressure Roller | 125.6 mm | Background |



<Rollers Layout>

4.1.5 Clearing LCD Error Messages

| Display | Meaning | Suggested solutions |
|---|--|--|
| ADC Error ADC Not Confirm Error | There is a problem in your printer system. | Unplug the power cord and plug it back in. |
| Close Toner Door | The top cover is not securely latched. | Close the cover until it locks into place. |
| Close Rear Door | The rear door is not securely latched. | Close the door until it locks into place. |
| Close Bin1 Door | The rear door of output expander is not securely latched. | Close the door until it locks into place. |
| Close Fuser Door | The fuser door is not securely latched. | Open the rear door and close the fuser door until it locks into place. |
| Tray [x] Open Tray [x] Open Close Tray [x] | The displayed tray is open. | Close the tray until it locks into place. |
| HCF Open HCF Open Close Door | HCF(High Capacity Feeder) is open. | Close the HCF until it locks into place. |
| Tray [x] Empty Load [Size][Type] | There is no paper in the tray. | Load paper in the tray. |
| HCF Empty Load [Size][Type] | There is no paper in the HCF. | Load paper in the HCF |
| MPF Empty Load [Size][Type] Press \checkmark Select | There is no paper in the multi-purpose feeder. | Load paper in the multi-purpose feeder. |
| Paper Mismatch/ Tray [x]/MPF Load [Size][Type] Continue \checkmark , Cancel X | The paper size specified in the printer properties does not match the paper being loading. | Load the correct paper in the tray. |
| Paper Jam 0 Check Toner Cover | Paper has jammed around the toner cartridge area. | Remove the jammed paper. |
| MP Tray Check MPF Door | Paper has jammed in the feeding area of the multi-purpose feeder. | Remove the jammed paper. |
| Paper Jam 0 Check Tray[x] | Paper has jammed in the feeding area of the paper tray. | Remove the jammed paper. |
| Paper Jam 1 Open/Close Door | Paper has jammed in the paper exit area or around the toner cartridge area. | Remove the jammed paper. |

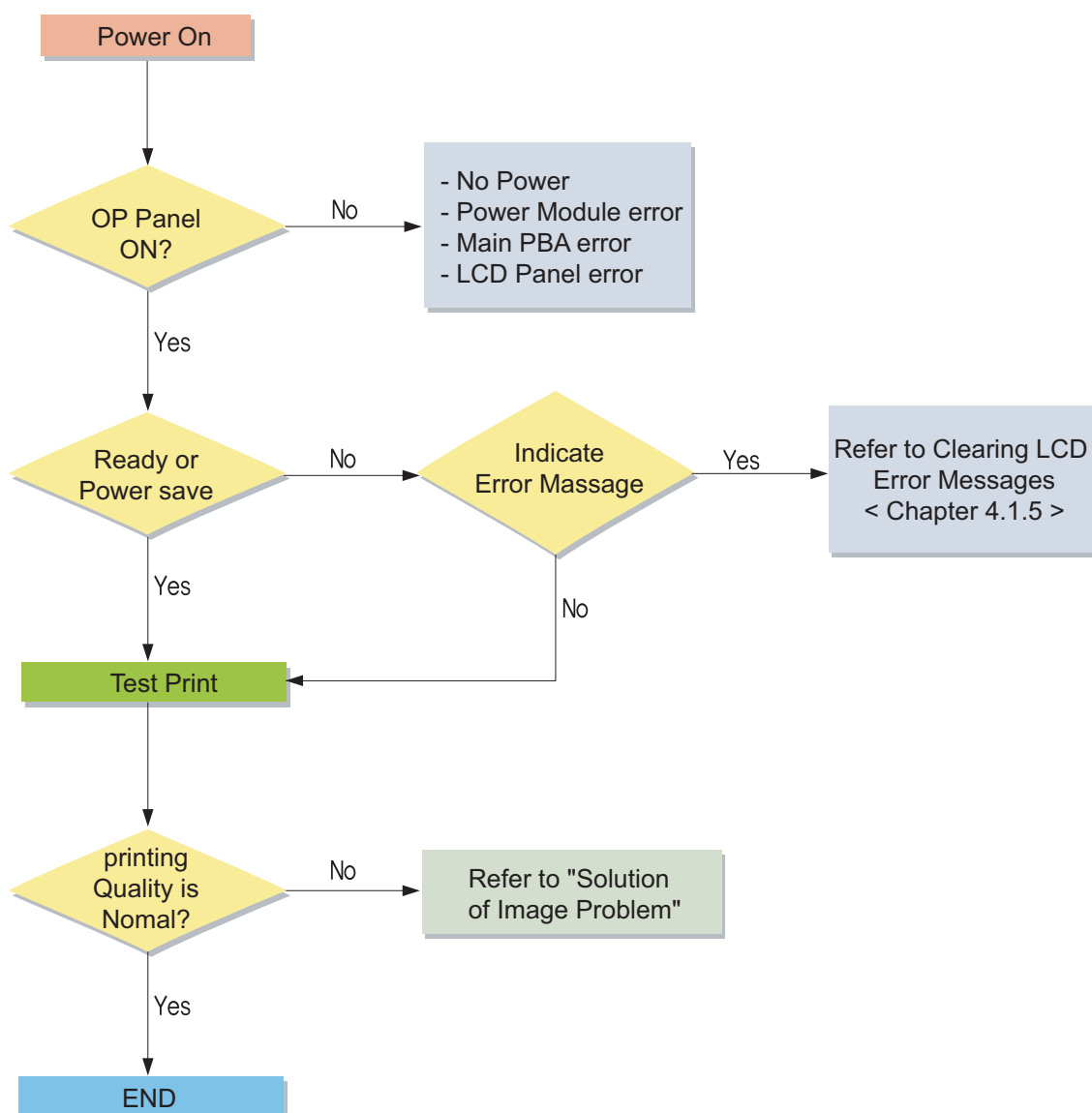
| Display | Meaning | Suggested solutions |
|--|---|---|
| Paper Jam 2... | Paper has jammed in the paper exit area. | Remove the jammed paper. |
| Duplex jam 0... | Paper has jammed during duplex printing. | Remove the jammed paper. |
| Duplex jam 1... | Paper has jammed during duplex printing. | Remove the jammed paper. |
| Standard Bin Full/ Standard Bin is 90% Full | The output tray is full. | The output tray can hold up to 250 sheets of plain paper. Once the paper is removed from the output tray, the printer resumes printing. |
| Optional Bin1 Full | The output tray of output expander is full. | The output expander can hold up to 650 sheets of plain paper. Once the paper is removed from the output expander, the printer resumes printing. |
| Open Heat Open Heat Error Power Cycle | There is a problem in the fuser unit. | Unplug the power cord and plug it back in. If the problem persists, see the fuser error flow chart. |
| Low Heat/ Low heat Error Power Cycle | There is a problem in the fuser unit. | Unplug the power cord and plug it back in. If the problem persists, see the fuser error flow chart. |
| Over Heat Overheat Error Power Cycle | There is a problem in the fuser unit. | Unplug the power cord and plug it back in. If the problem persists, see the fuser error flow chart. |
| LSU Motor Error/ LSU Motor Error/ Power Cycle | A problem has occurred in the LSU(Laser Scanning Unit). | Unplug the power cord and plug it back in. If the problem persists, see the LSU unit error flow chart. |
| Hsync Error/ LSU Hsync Error Power Cycle | A problem has occurred in the LSU(Laser Scanning Unit). | Unplug the power cord and plug it back in. If the problem persists, see the LSU unit error flow chart. |
| Fuser Error Fuser Fan Locked Power Cycle | There is a problem in the cooling fan of the printer. | Open and then close the rear door. |
| SMPS Error SMPS Fan Locked Power Cycle | There is a problem in the SMPS fan of the printer. | Unplug the power cord and plug it back in. |
| Fuser Error/ Fuser Not Installed Check Rear Door | The fuser unit is not installed or not detected. | Install the fuser unit or open and then close the rear door. |
| Inner Temp. Error/ Inner Temp. Error Power Cycle | There is a problem in your printer system. | Unplug the power cord and plug it back in. |
| Deve Motor Error/ Deve Motor Locked Power Cycle | There is a problem in the development motor of the printer. | Unplug the power cord and plug it back in. |

| Display | Meaning | Suggested solutions |
|--|--|---|
| Power Saver | The printer is in power save mode. | When data is received, it switches to on-line automatically. |
| Warming Up Please Wait... | Your printer is warming up now. | Please wait a few minutes. |
| OPC is Cleaning | Your printer is printing a Cleaning sheet now. | Please wait a few minutes. |
| Fuser Cleaning | Your printer is printing a Cleaning sheet now. | Please wait a few minutes. |
| Self Diagnostics Temperature | The engine in your printer is checking some problems detected. | Please wait a few minutes. |
| Self Diagnostics LSU | The LSU(Laser Scanning Unit) in your printer is checking some problems detected. | Please wait a few minutes. |
| Install Toner | A toner cartridge is not installed. | Install a toner cartridge. |
| Invalid Toner/ Toner is not valid for this machine | The toner cartridge you have installed is not for your printer. | Install a genuine Dell toner cartridge designed for your printer. |
| IP Conflict/ IP Address conflict | The network IP address you have set is being used by someone else. | Check the IP address and reset it, if necessary. See Setting Up a Network-connected Printer. |
| Paper Mismatch/ Tray | The paper size specified in the printer properties does not match the paper you are loading. | Load the correct paper in the tray. |

4.2 Troubleshooting

4.2.1 Procedure of Checking the Symptoms

Before attempting to repair the printer first obtain a detailed description of the problem from the customer.

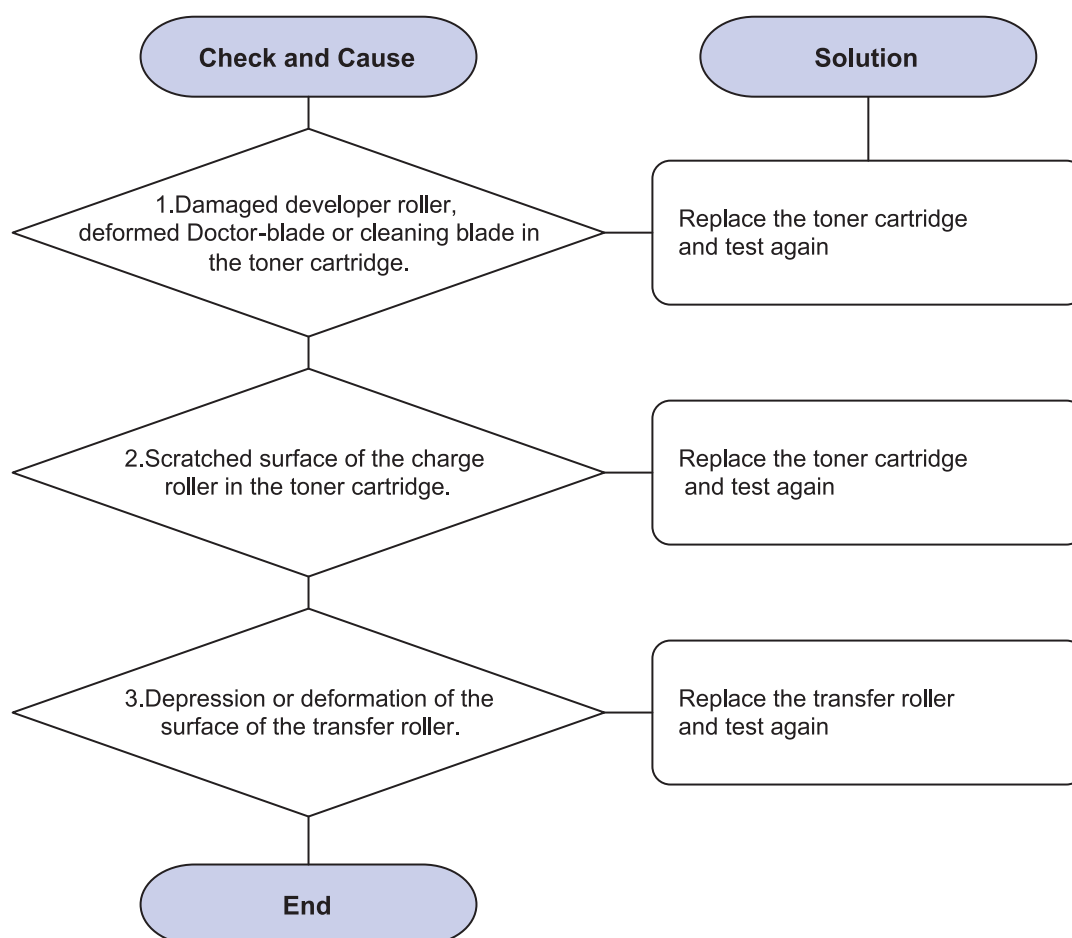


4.2.2 The cause and solution of image quality

1) Vertical Black Line and Band

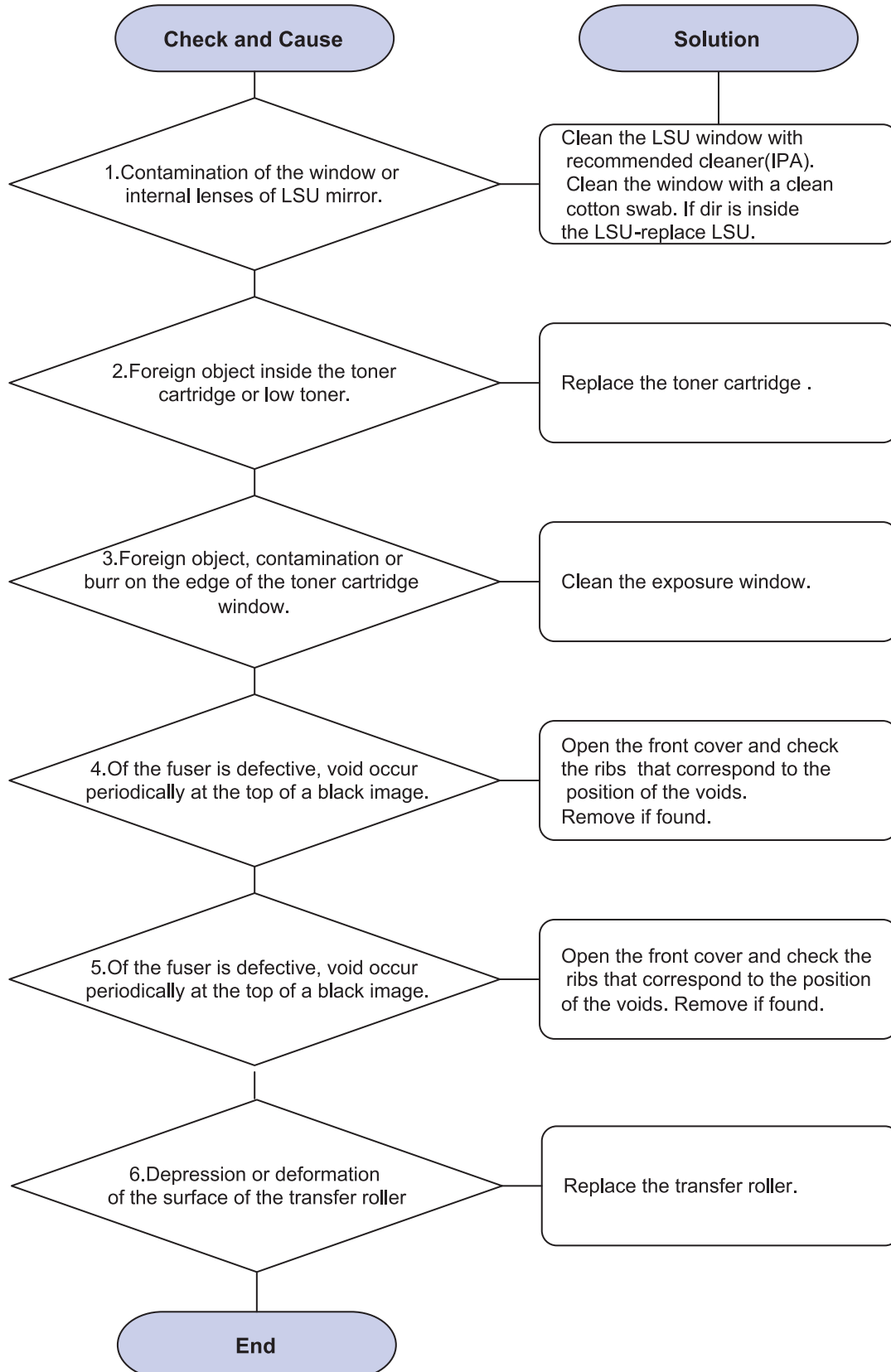
Description

1. Straight thin black vertical lines occur in the printing
2. Dark black vertical bands occurs in the printing



2) Vertical White Line

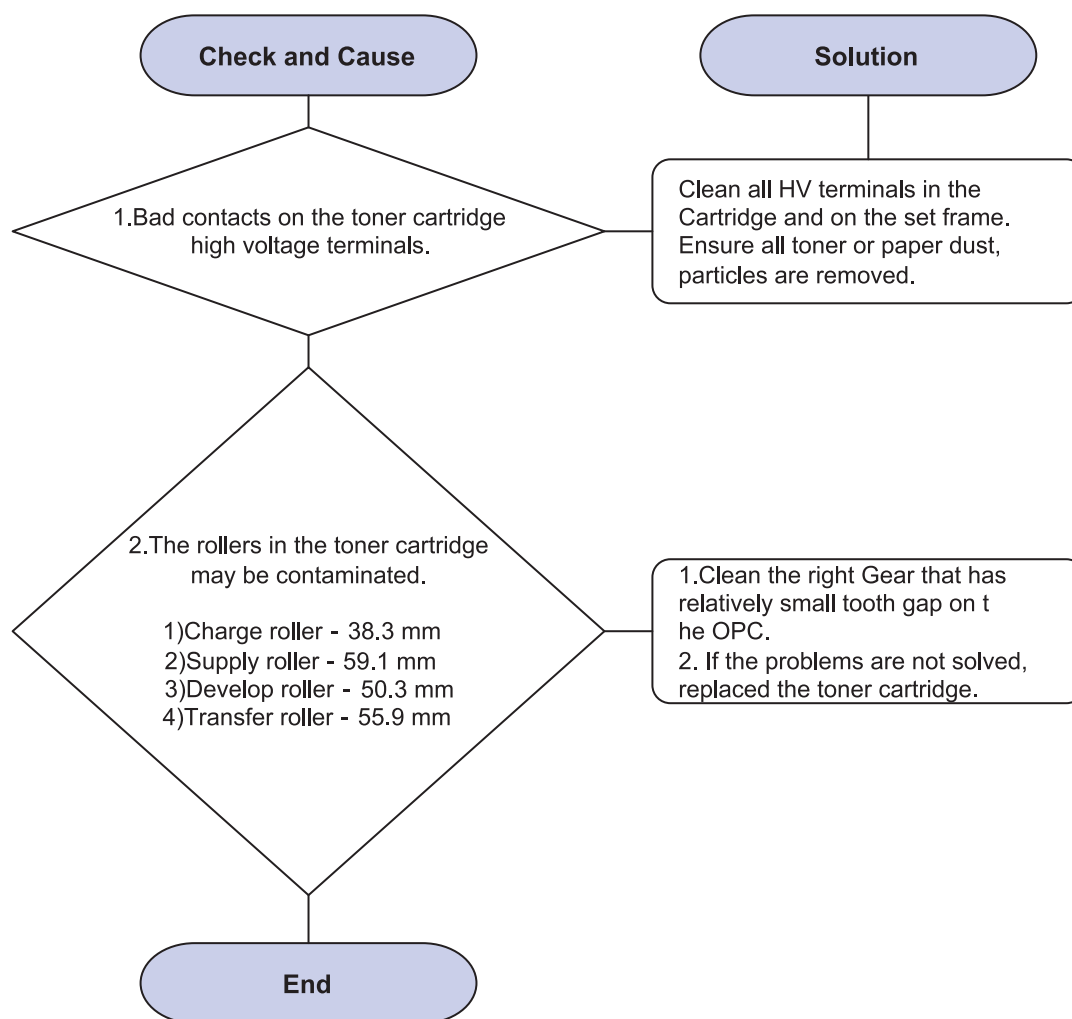
Description White vertical voids in the image.



3) Horizontal Black Bands

Description

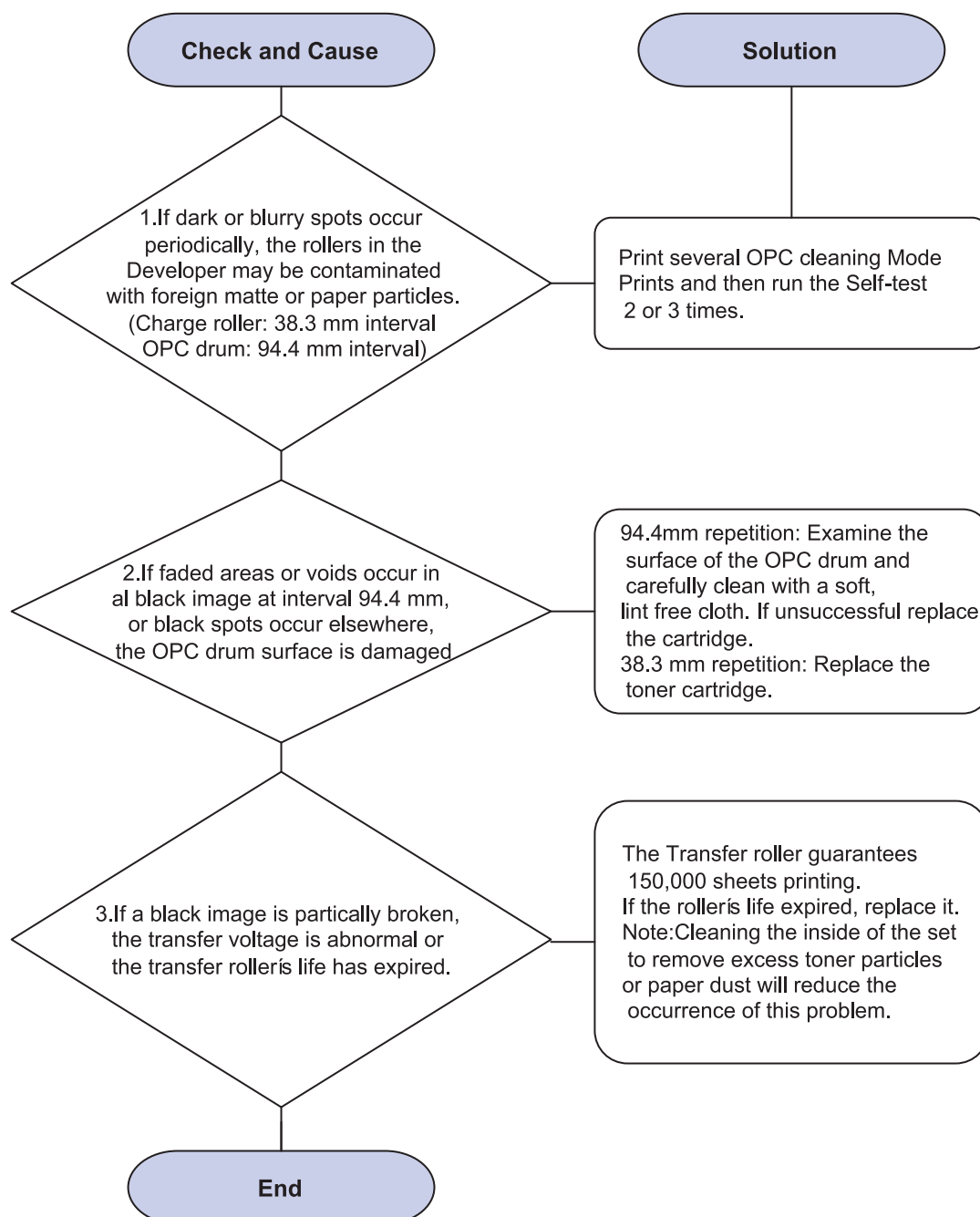
Dark or blurry horizontal stripes occur in the printing periodically
(These may occurs at regular intervals down the page.)



4) Black/White Spot

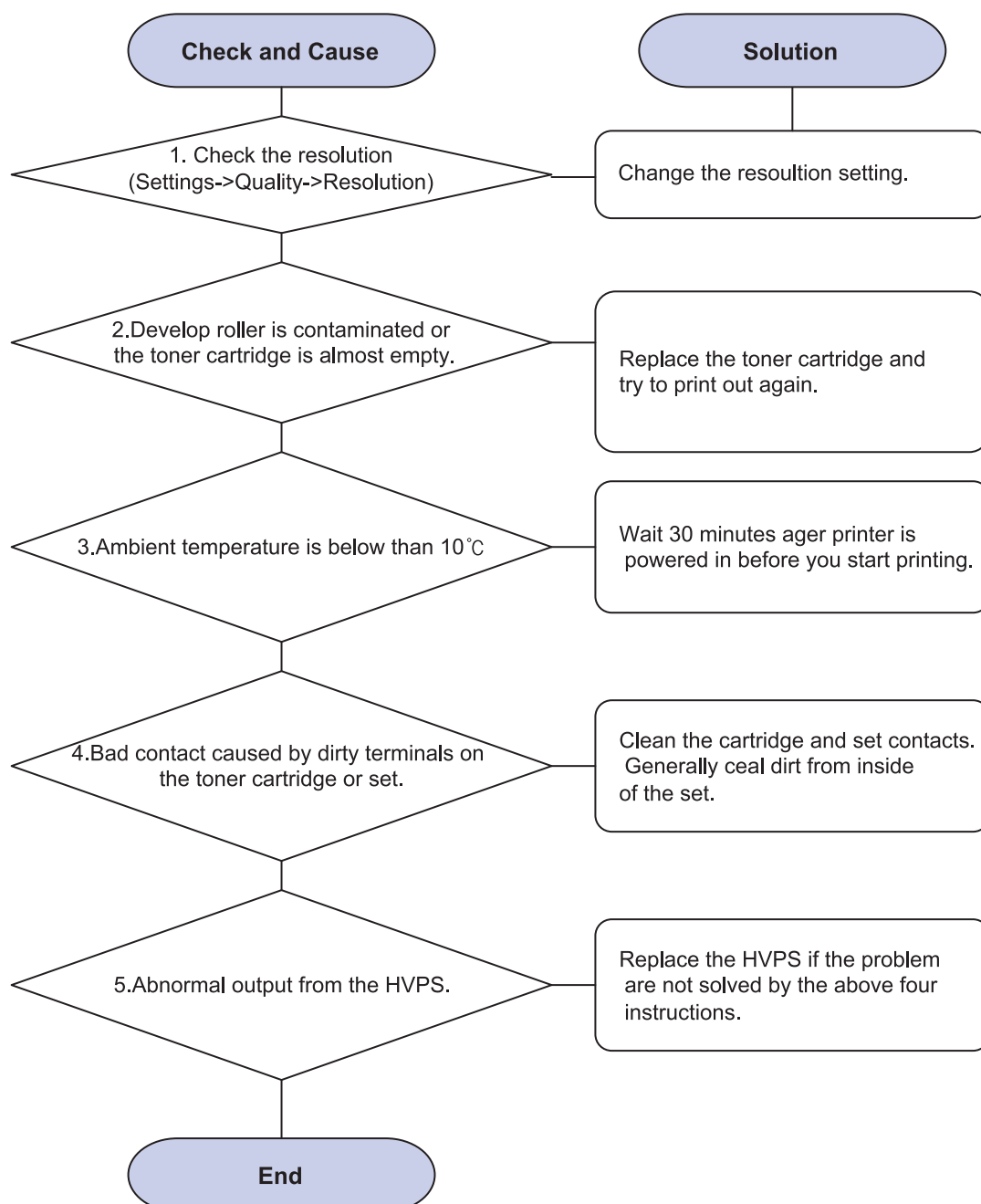
Description

1. Dark or blurry spots occur periodically in the printing
2. White spots occur periodically in the printing



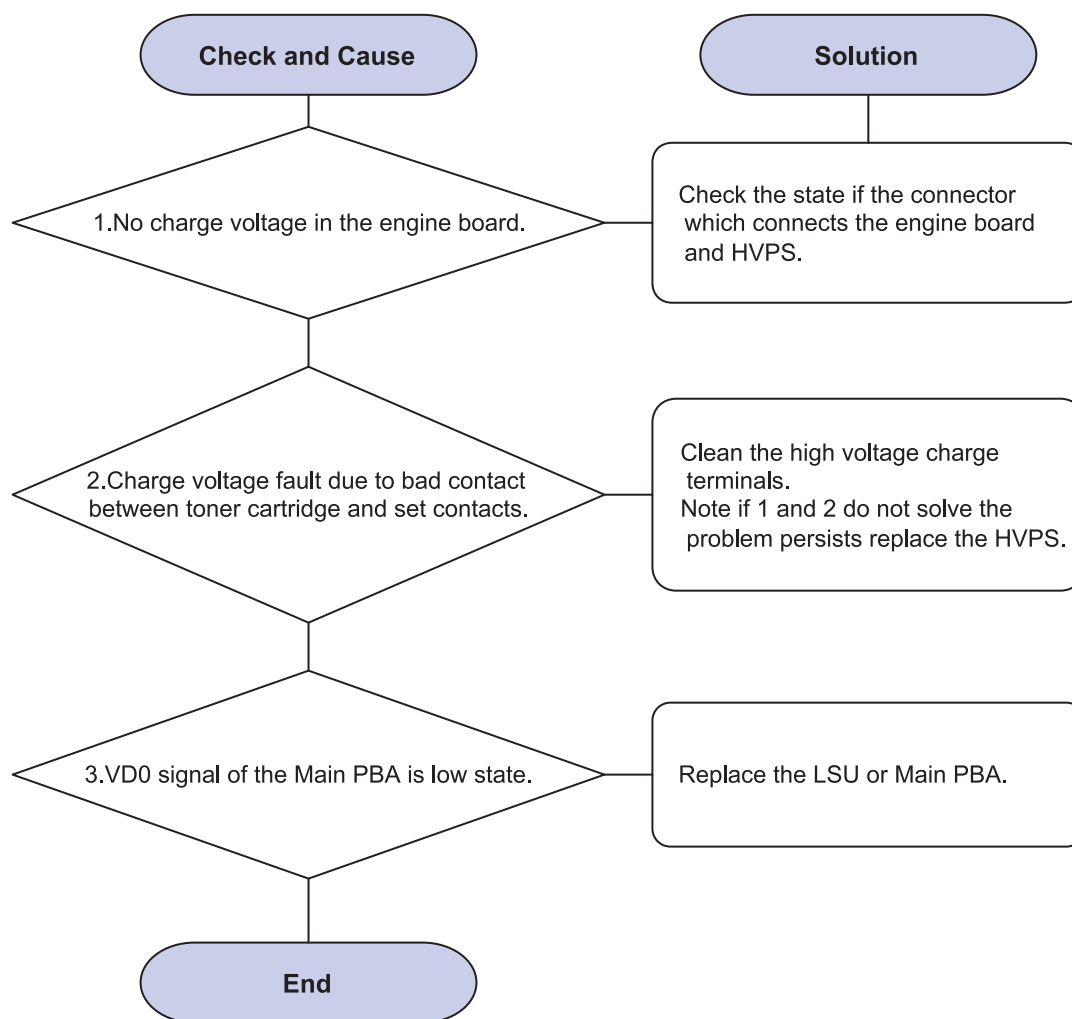
5) Light Image

Description The printed image is light, with no ghost.



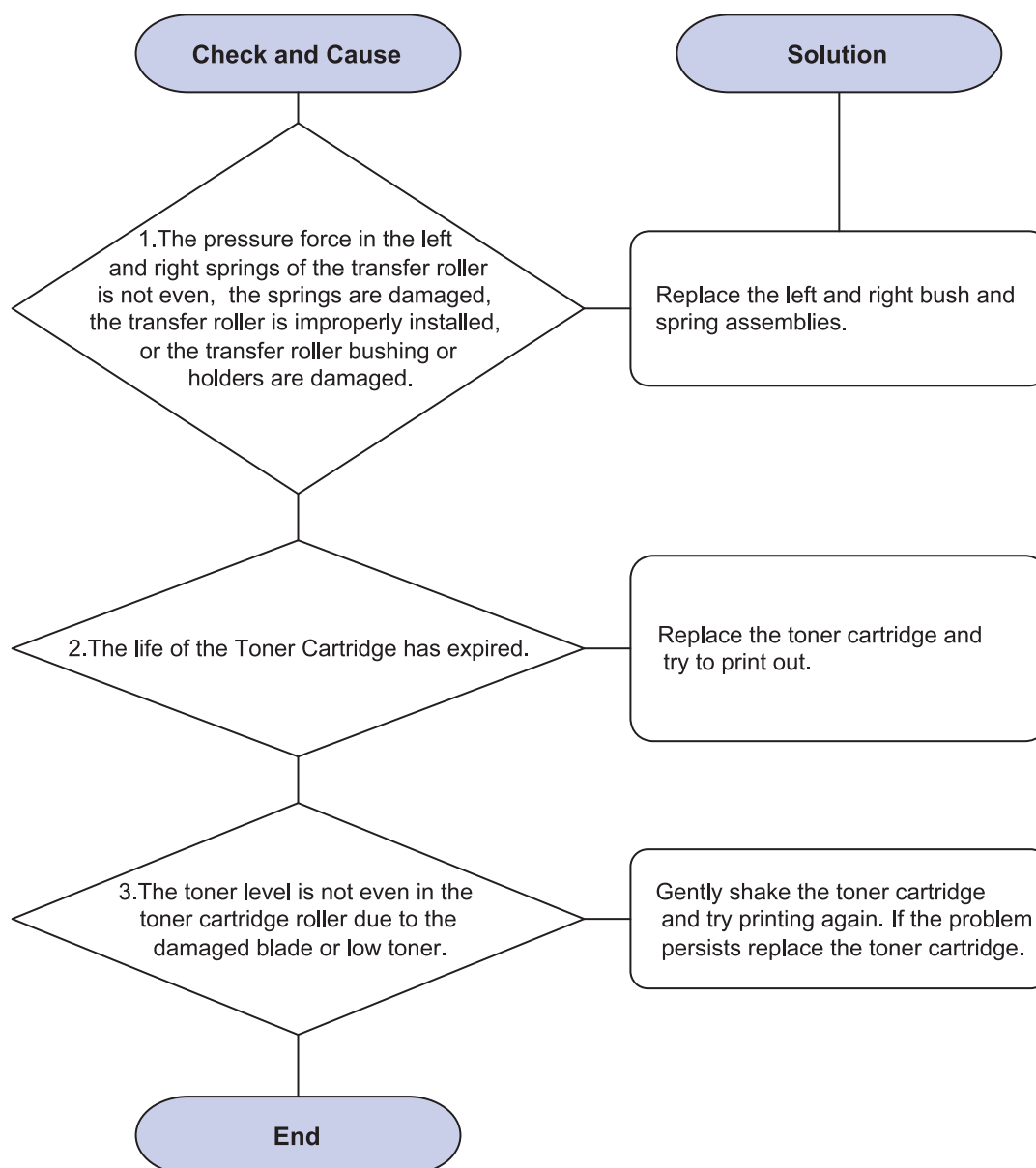
6) Dark image or Black

Description The printed image is dark.



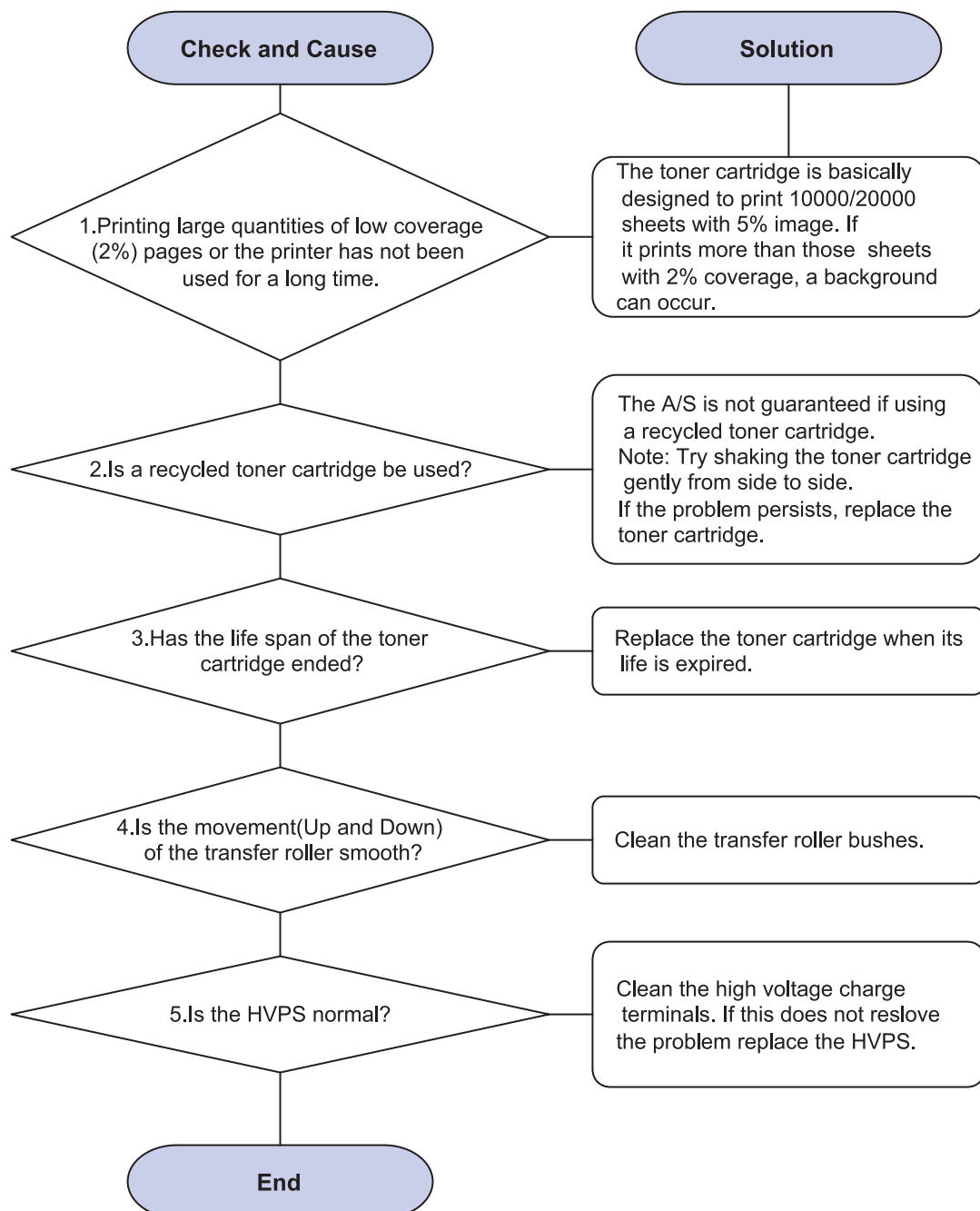
7) Uneven Density

Description Print Density is uneven between left and right.



8) Background

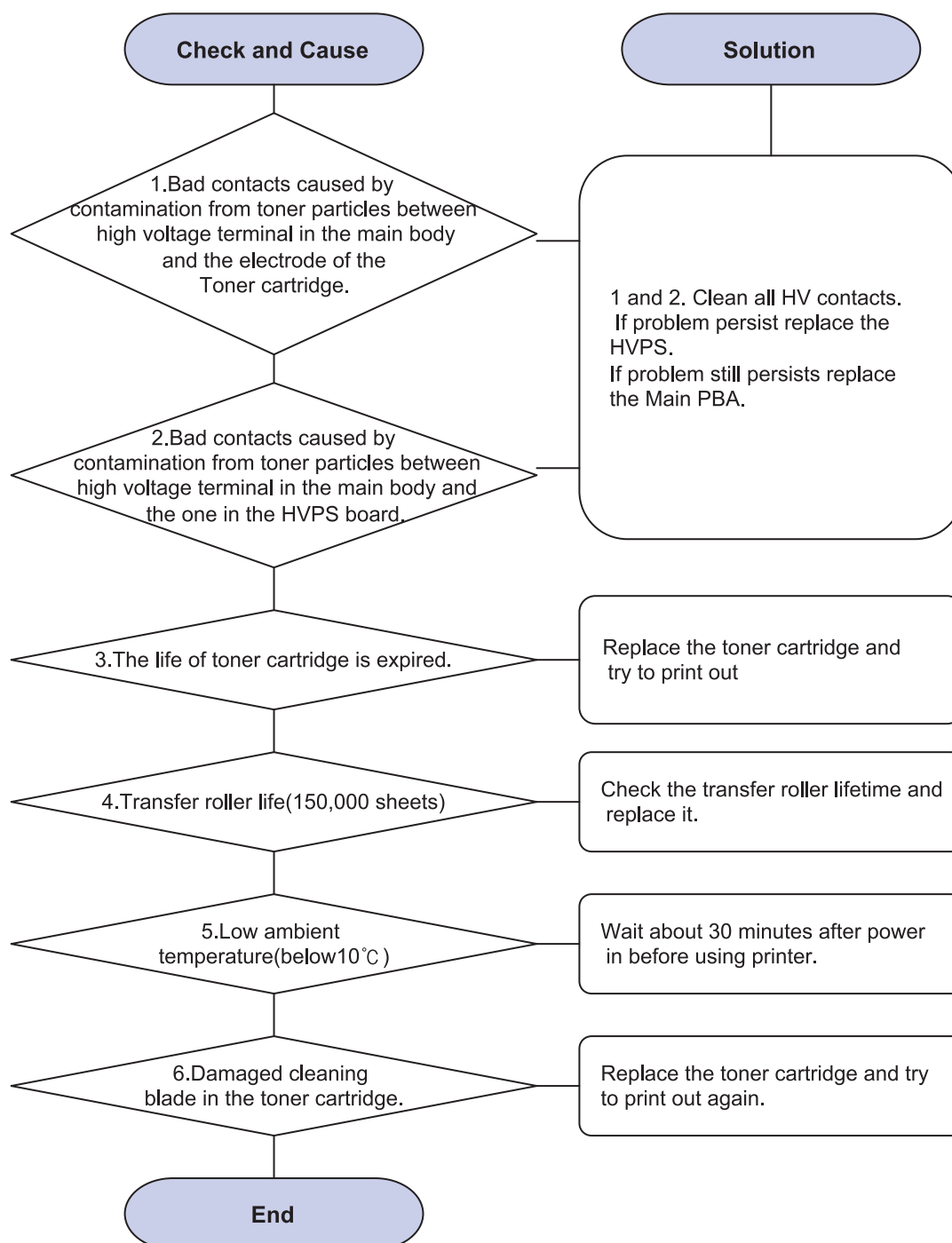
Description Light dark background appears in whole area of the printing.



9) Ghost(1)

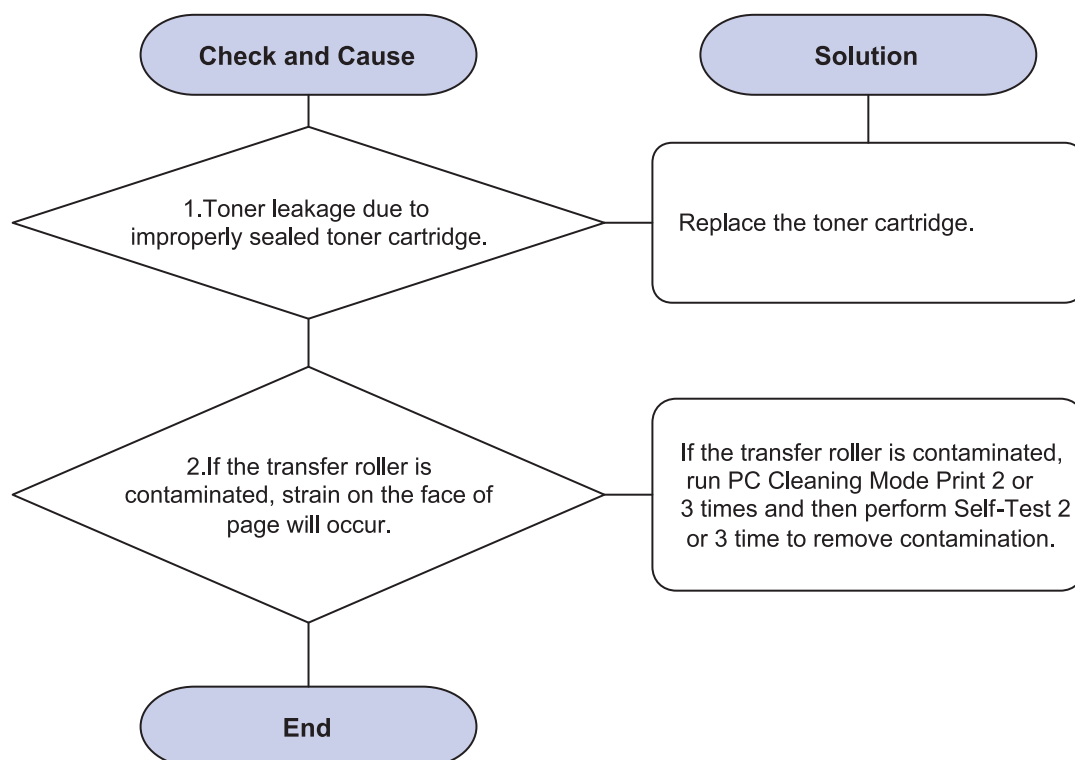
Description

Ghost occur at 94.4mm intervals of the OPC drum in the whole Printing



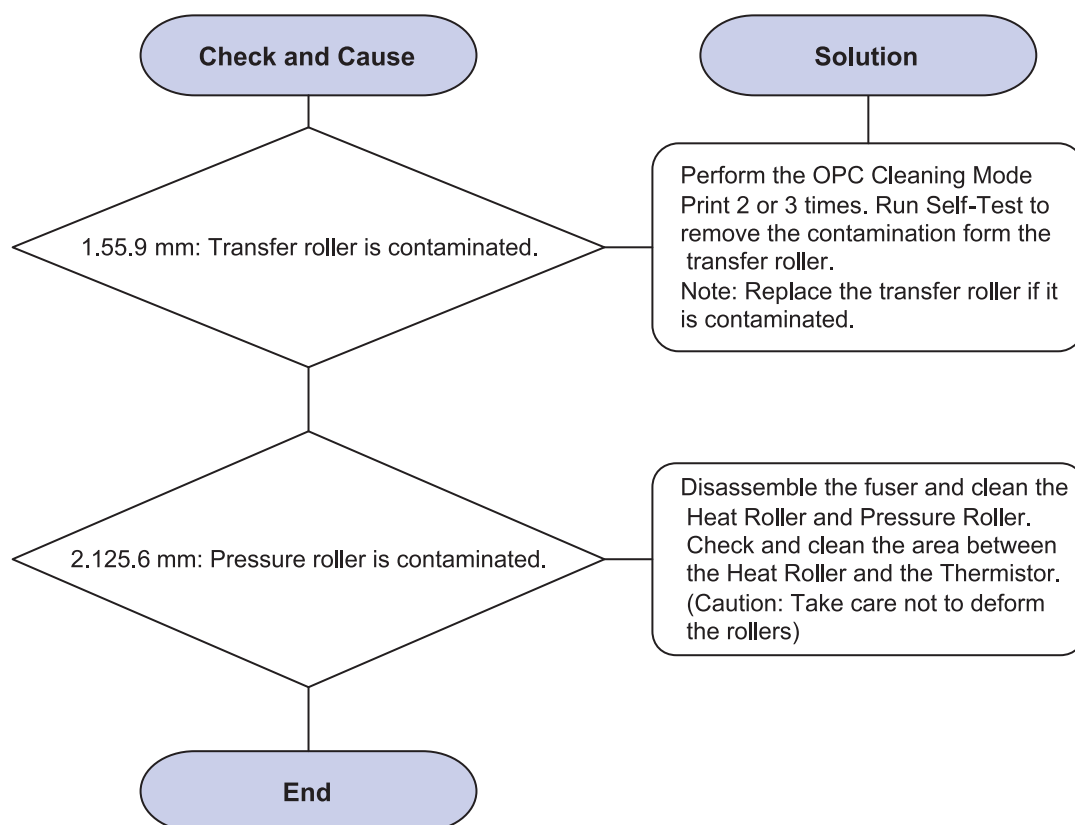
10) Strain in the Face of the Page

Description The background on the face of the printed page strained.



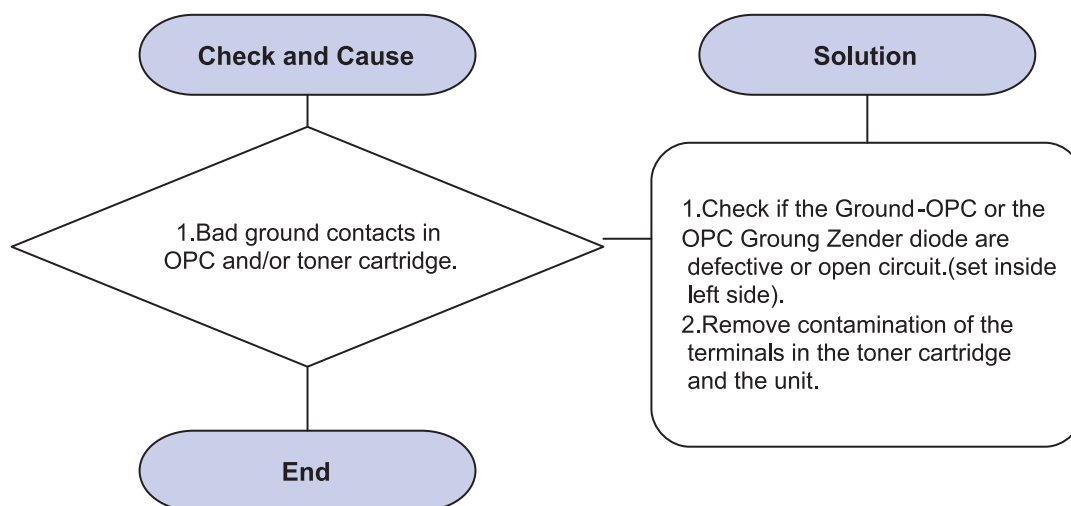
11) Strains on Back of Page

Description The back of the page is strained at 55.9 or 125.6 mm intervals.



12) Blank Page Print out(1)

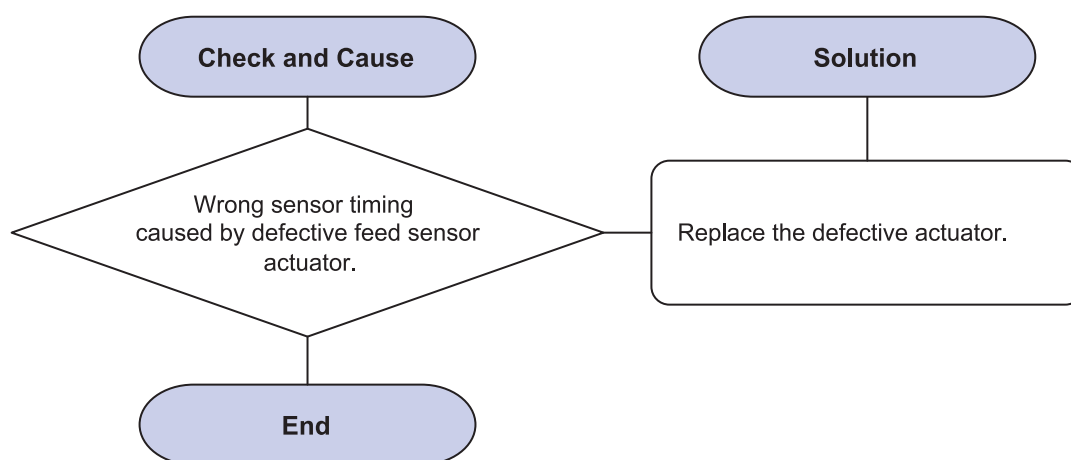
| Description | Blank page is printed. |
|-------------|------------------------|
|-------------|------------------------|



4.2.3 The cause and solution of the paper feeding

1) Wrong Print Position

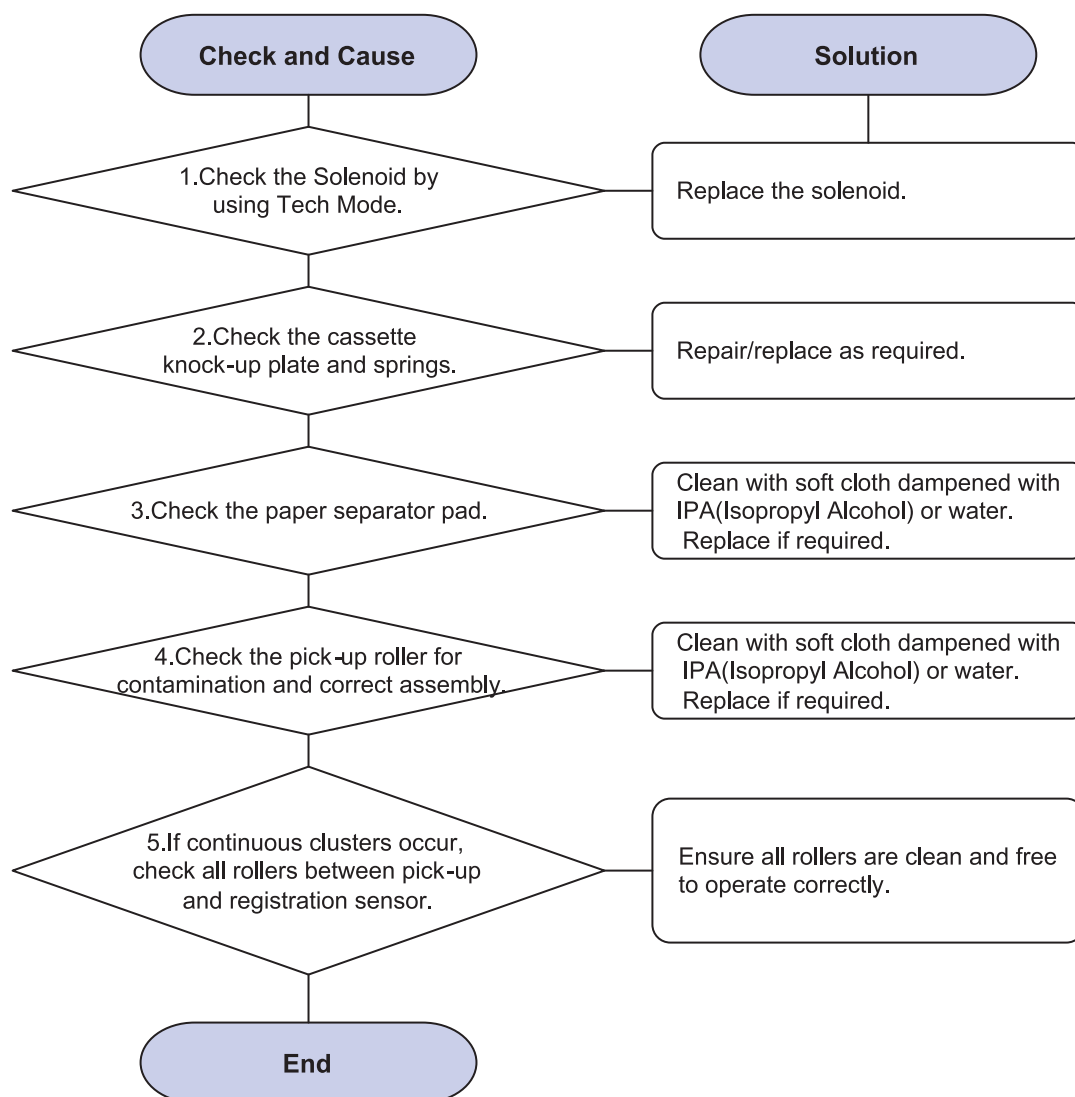
| | |
|--------------------|---|
| Description | Printing begins at wrong position on the paper. |
|--------------------|---|



2) JAM 0

Description

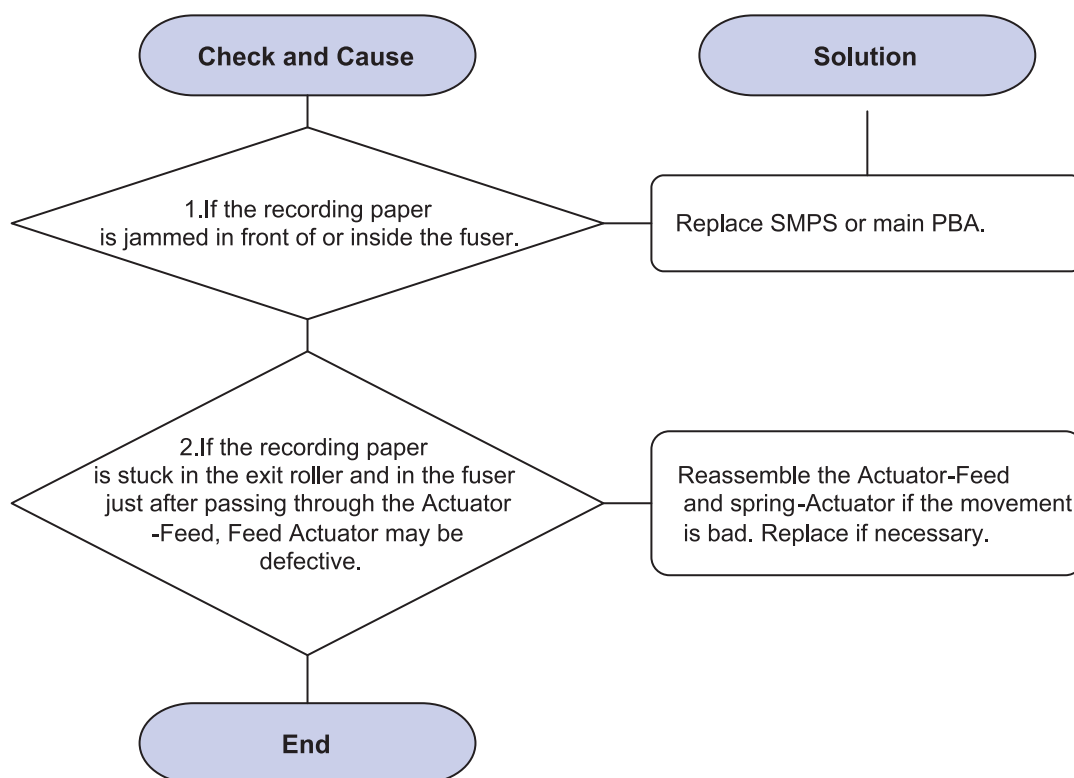
1. Paper does not exit from the cassette.
2. Jam-0 occurs when the paper feeds into the printer



3) JAM 1

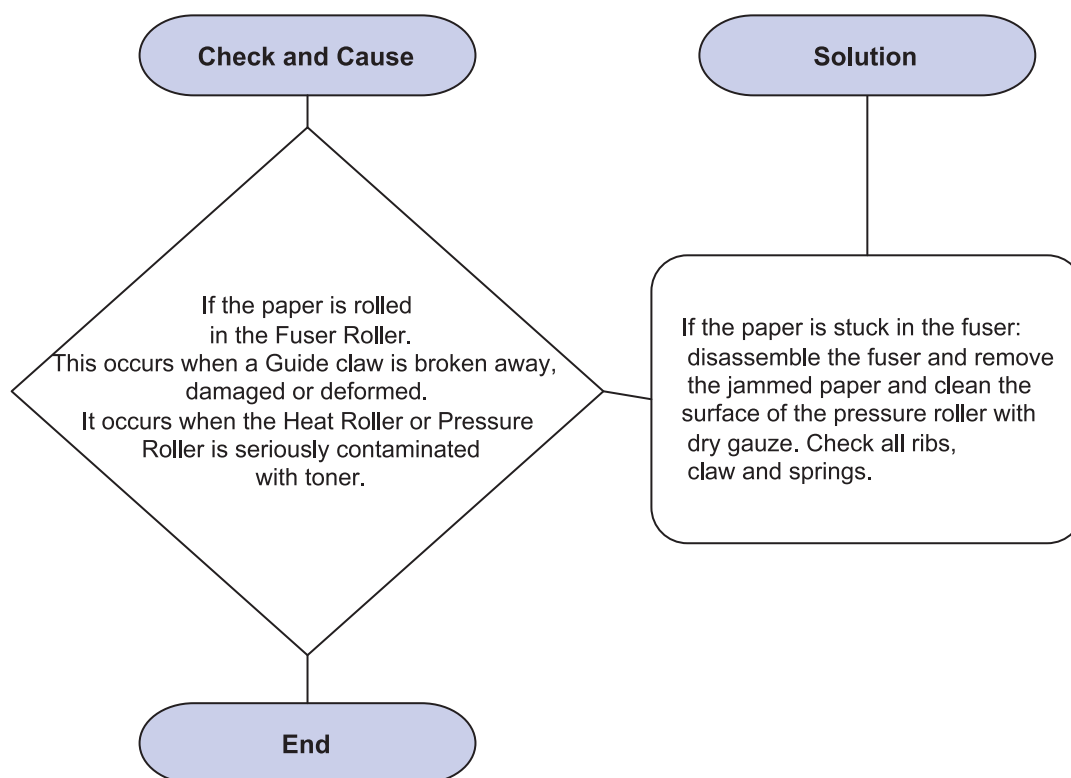
Description

1. Paper is jammed in front of or inside the fuser.
2. Paper is stuck in the exit roller and in the fuser just after passing through the Actuator-Feed



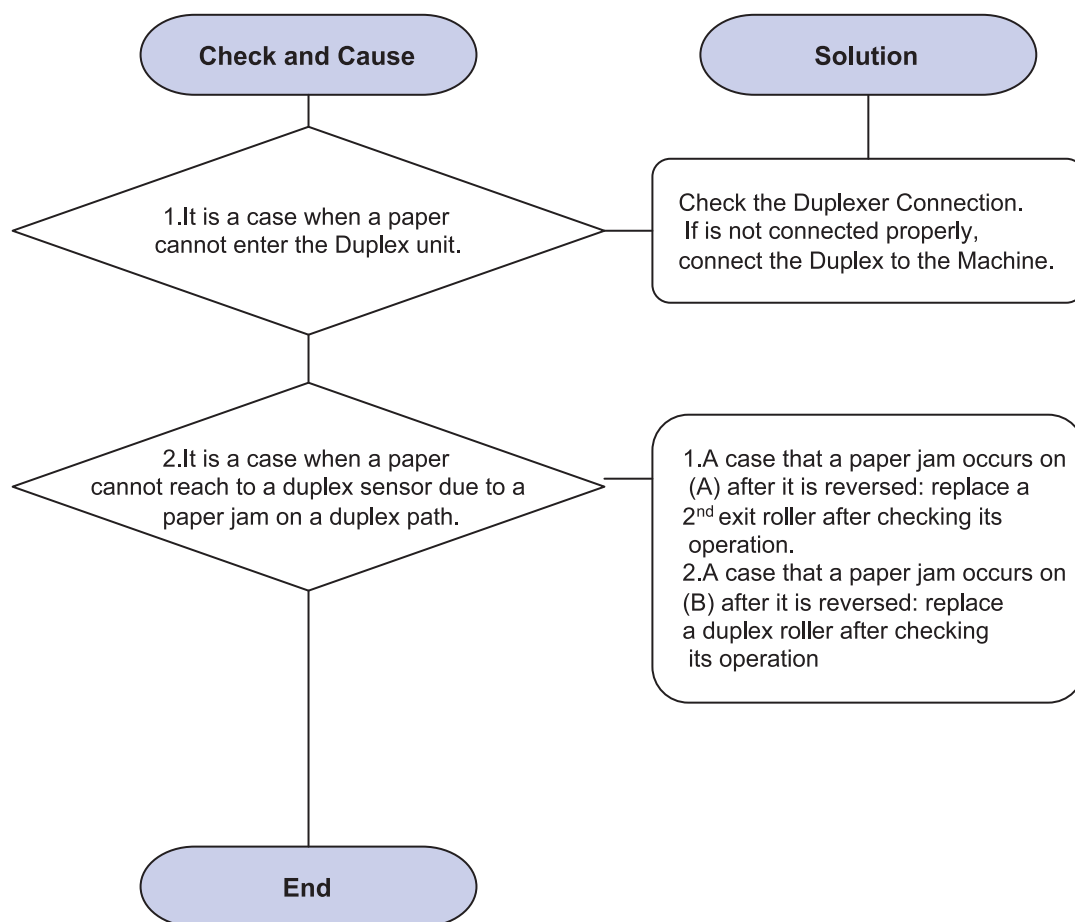
JAM 2**Description**

1. Recording paper is jammed in front of or inside the fuser.
2. Recording paper is stuck in the discharge roller and in the fuser just after passing through the Actuator-Feed.



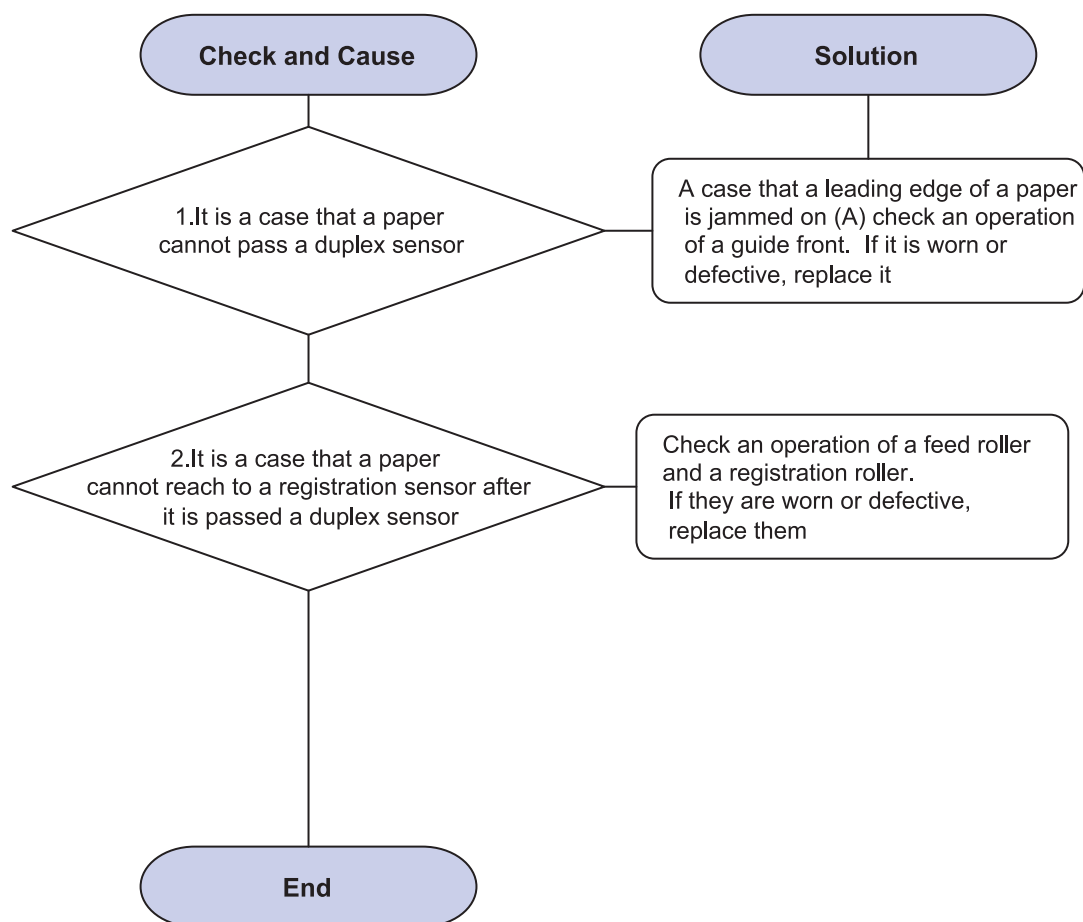
4) Duplex JAM 1

Description A Message 'Duplex JAM 1' is displayed in a LCD window.



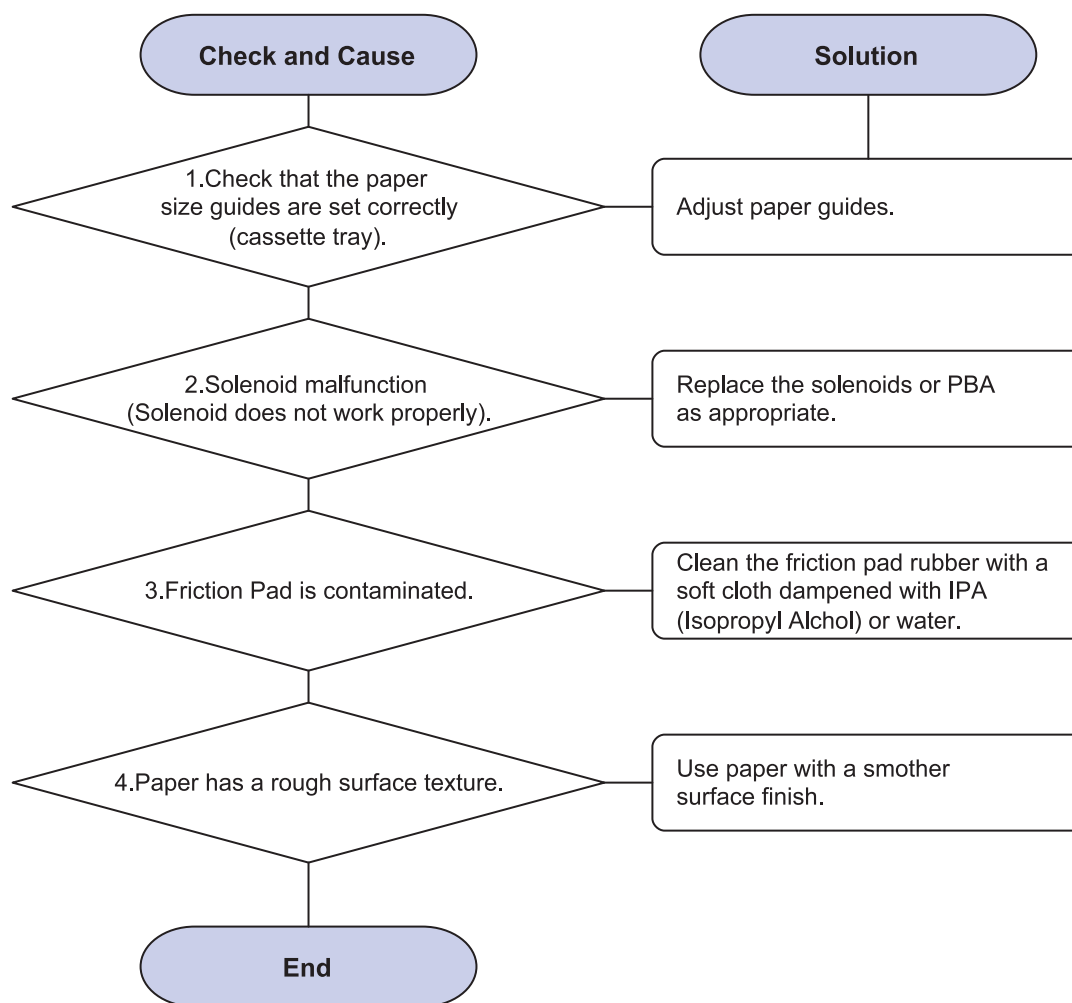
5) Duplex JAM 0

Description A message 'Duplex JAM 0' is displayed in a LCD window.



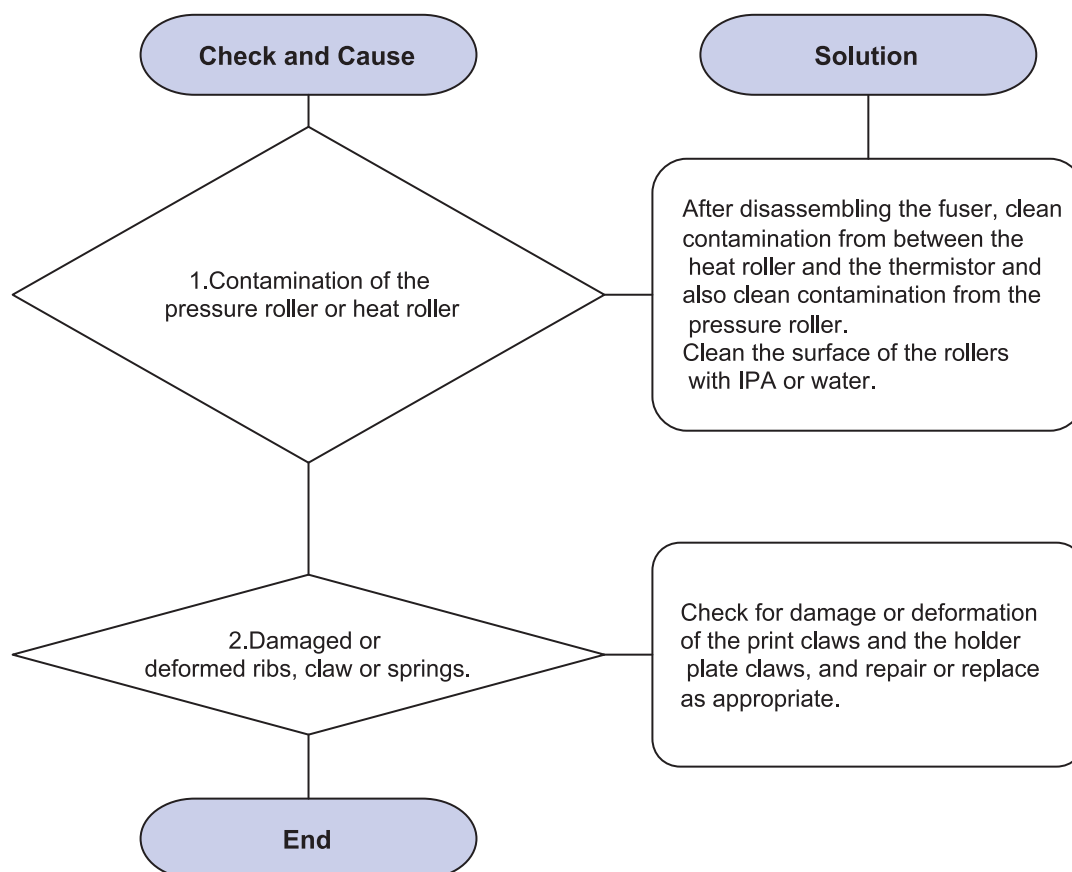
6) Multi-Feeding

Description Multiple sheets of paper are fed at once.



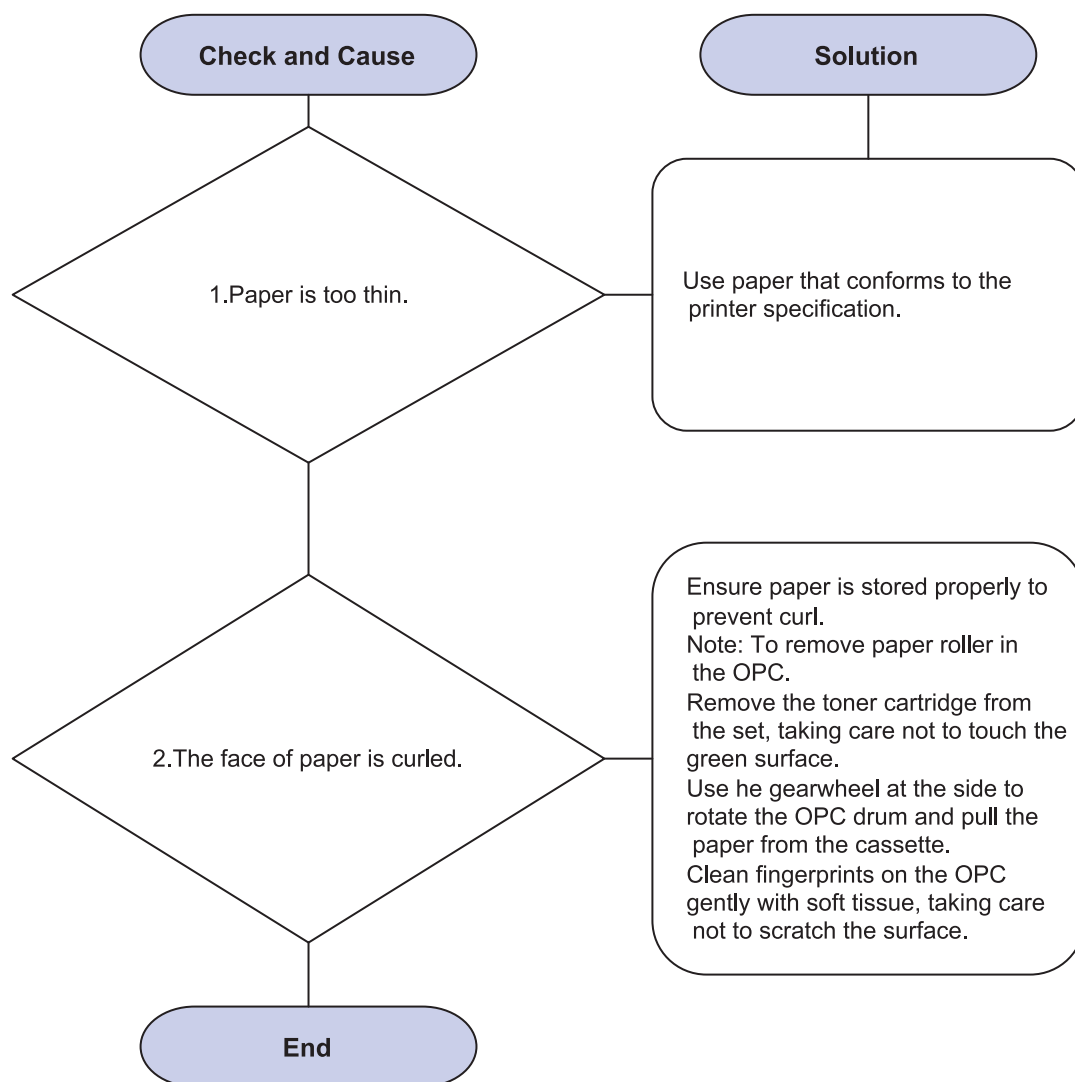
7) Paper rolled in the fuser

Description Paper rolled around fuser rollers or 'Concertina' jam



8) Paper rolled on the OPC Drum

Description Paper is rolled up in the OPC.

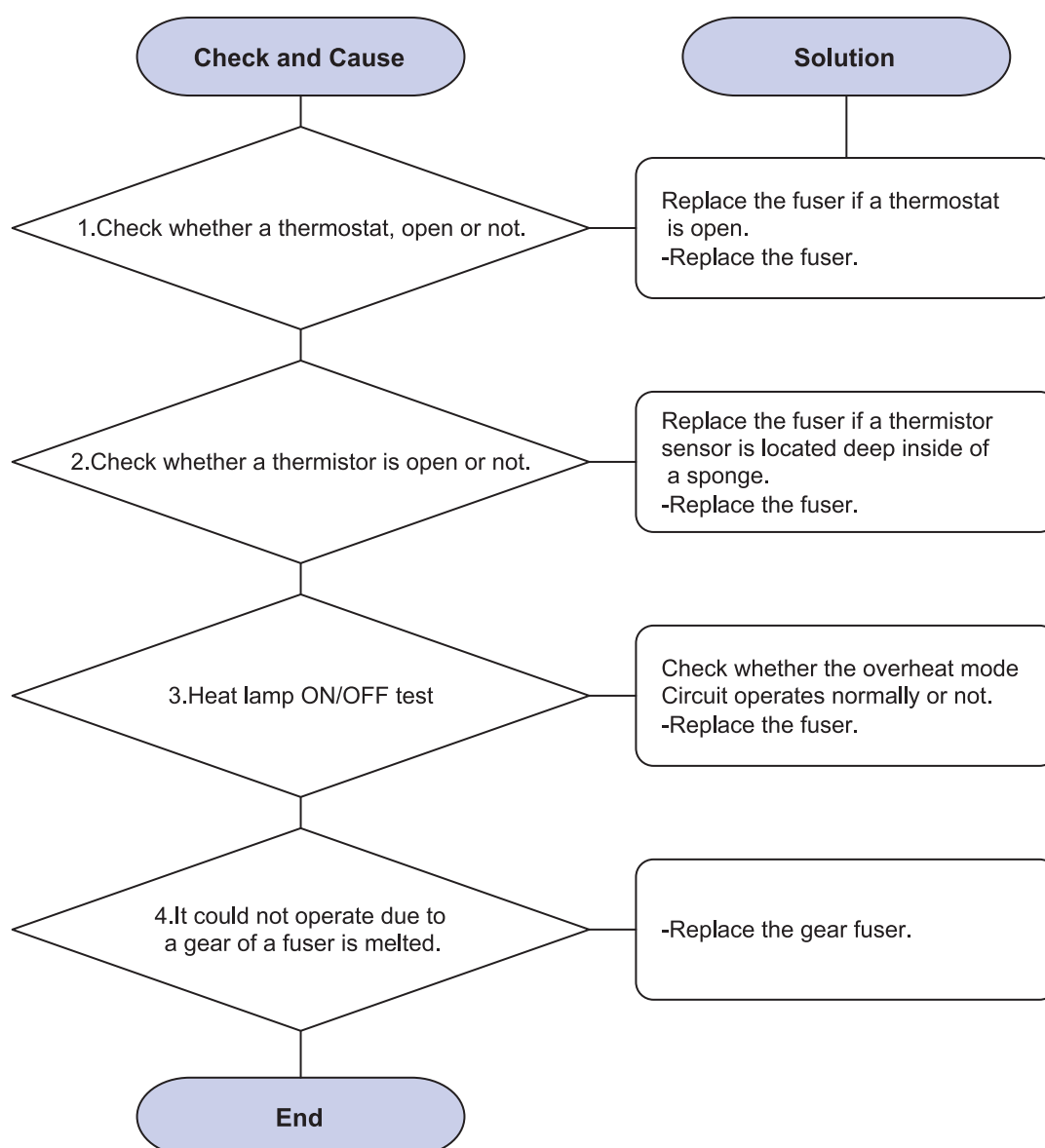


4.2.4 The cause and solution of the malfunction

1) Fuser Error

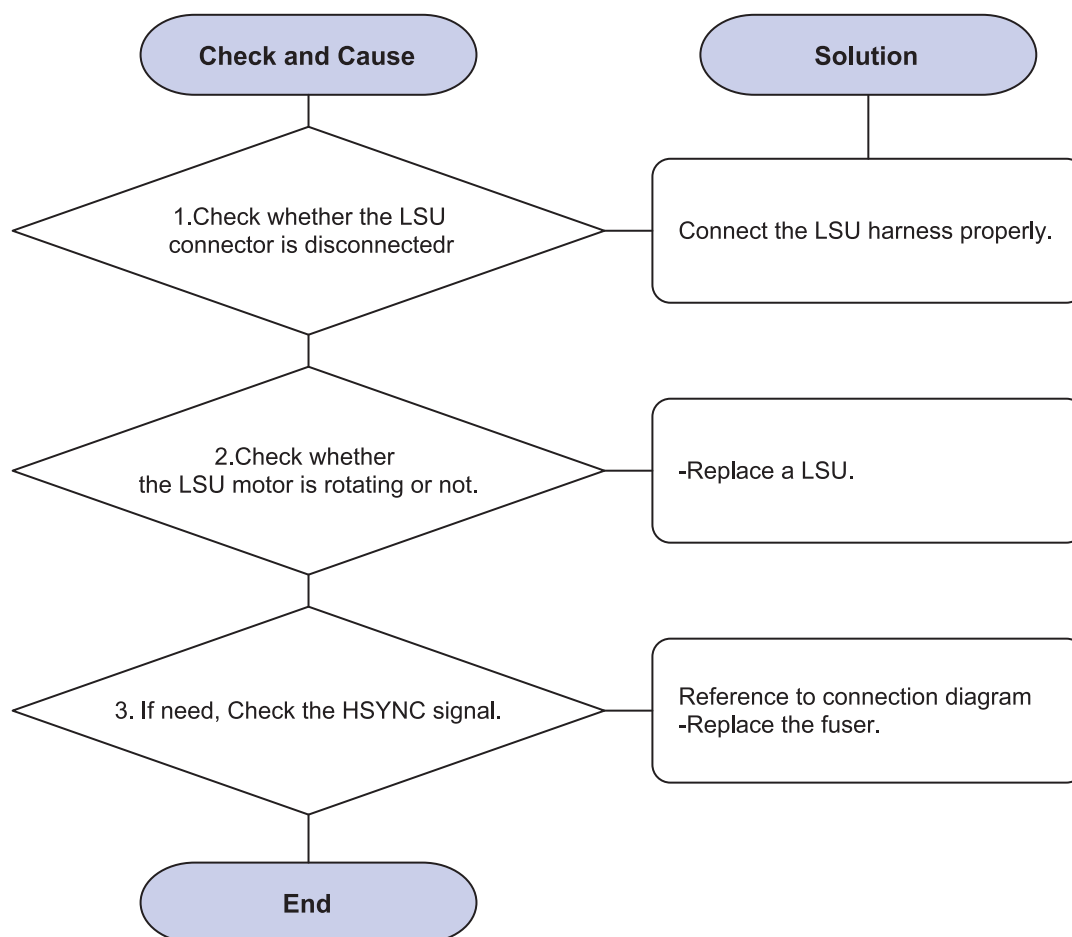
Description

message “Engine Fuser Low Heat Error/Engine Fuser Over Heat Error” is displayed in a LCD panel.



2) LSU Unit Error

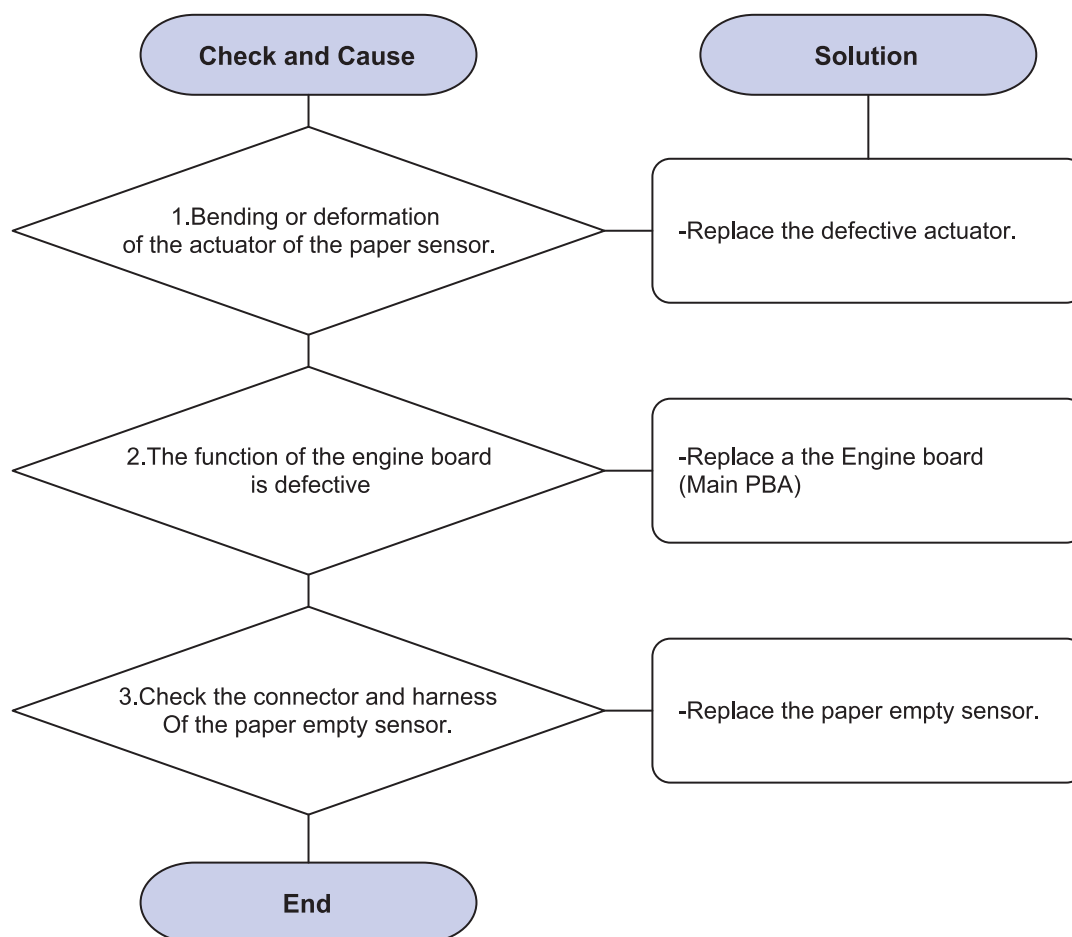
Description message "Engine Hsyne Error" is displayed in a LCD panel.



3) Paper Empty Error

Description

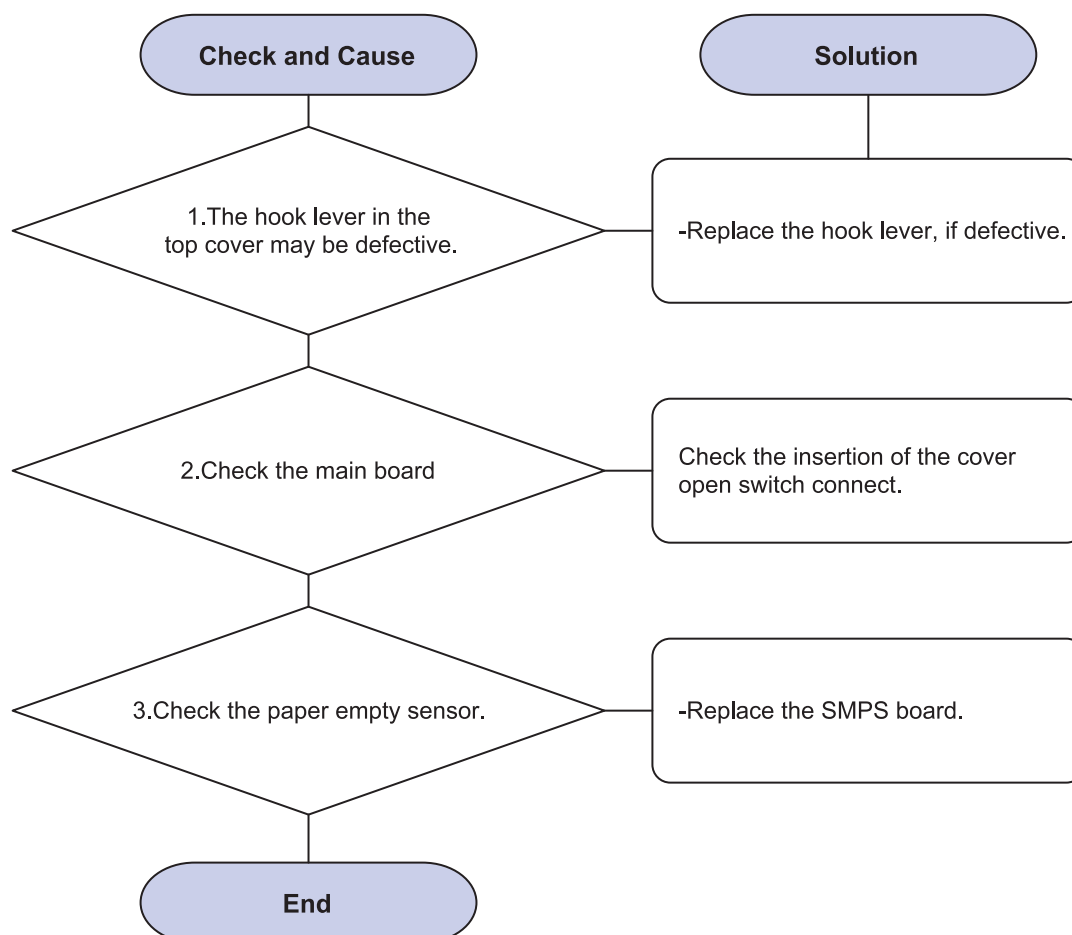
The paper lamp on the operator panel is on even when paper is loaded in the cassette.



4) Cover open Error

Description

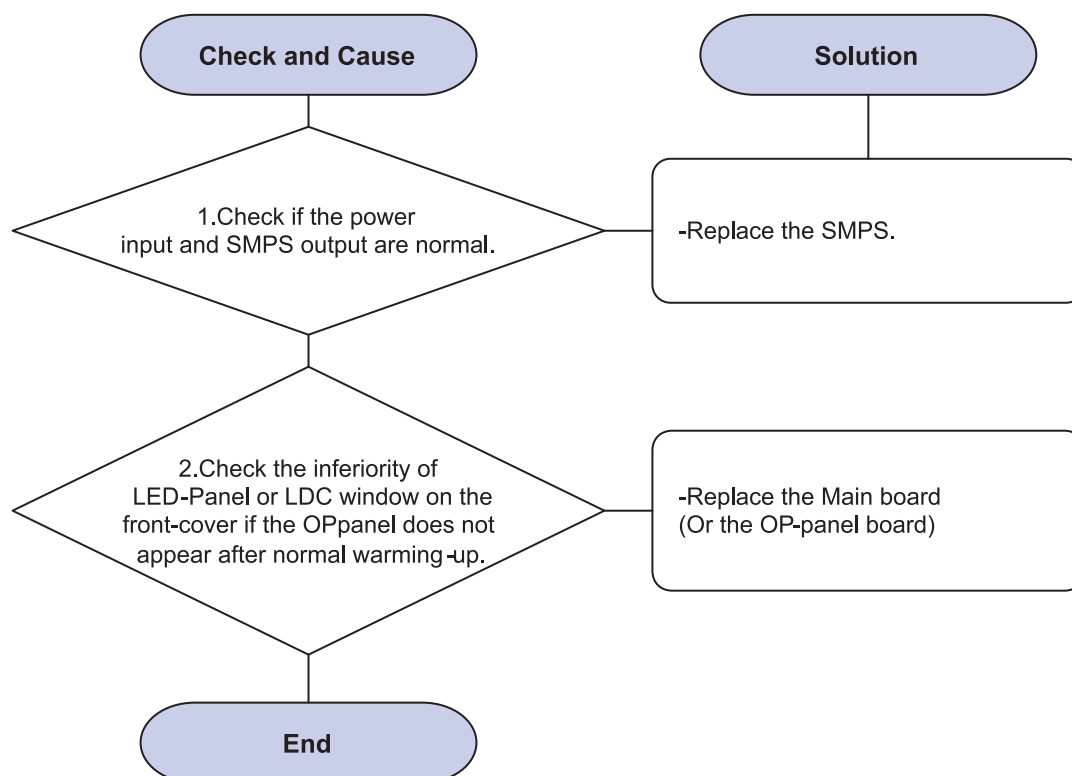
message "Colse Top Cover" is displayed in a LCD panel.
The ERROR lamp is on even when the print cover is closed.



5) No power Error

Description

When system power is turned on, all lamps on the operator panel do not come on.

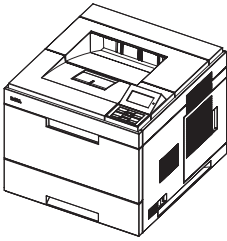
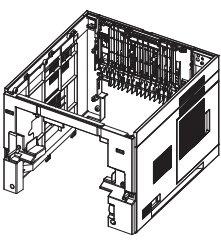
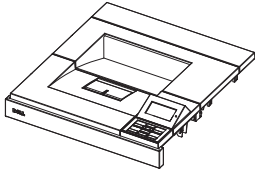
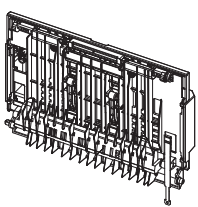
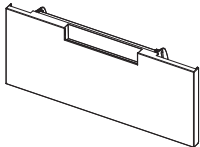
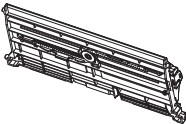
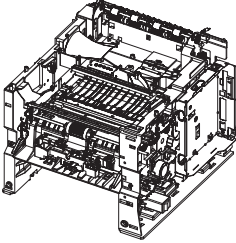
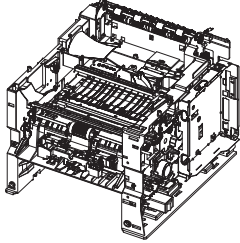
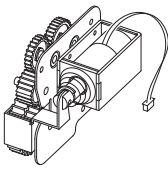
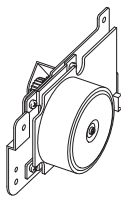
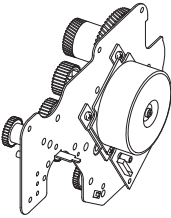
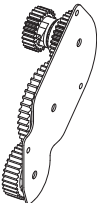
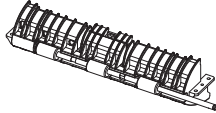
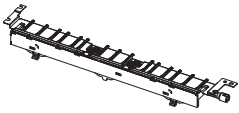
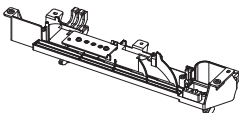
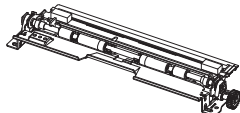
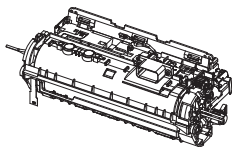
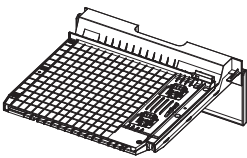
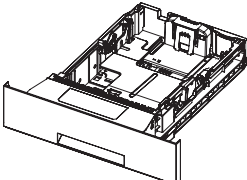
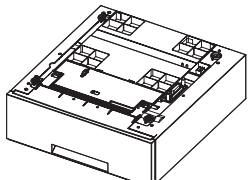


5. ExplodedView and Parts list

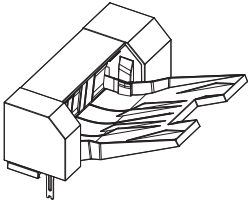
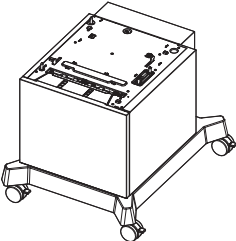
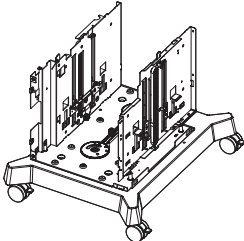
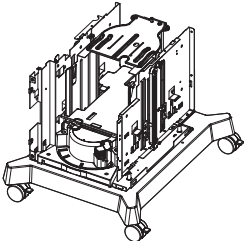
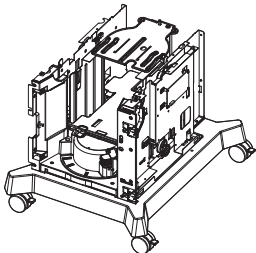
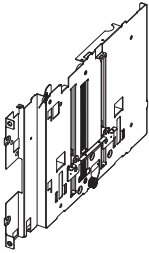
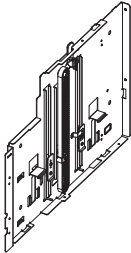
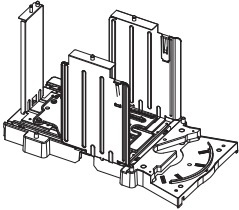
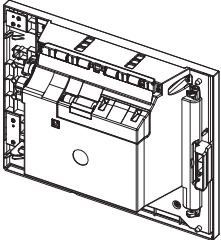
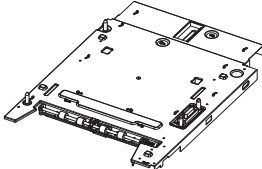
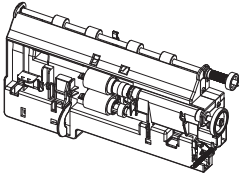
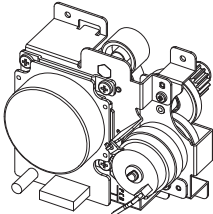
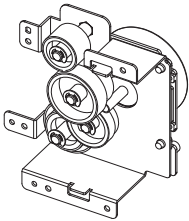
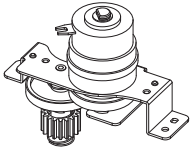
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| 5.12 Idle Gear Unit | 5-30 | 5.30 HOU-UPPER_HCF | 5-71 |
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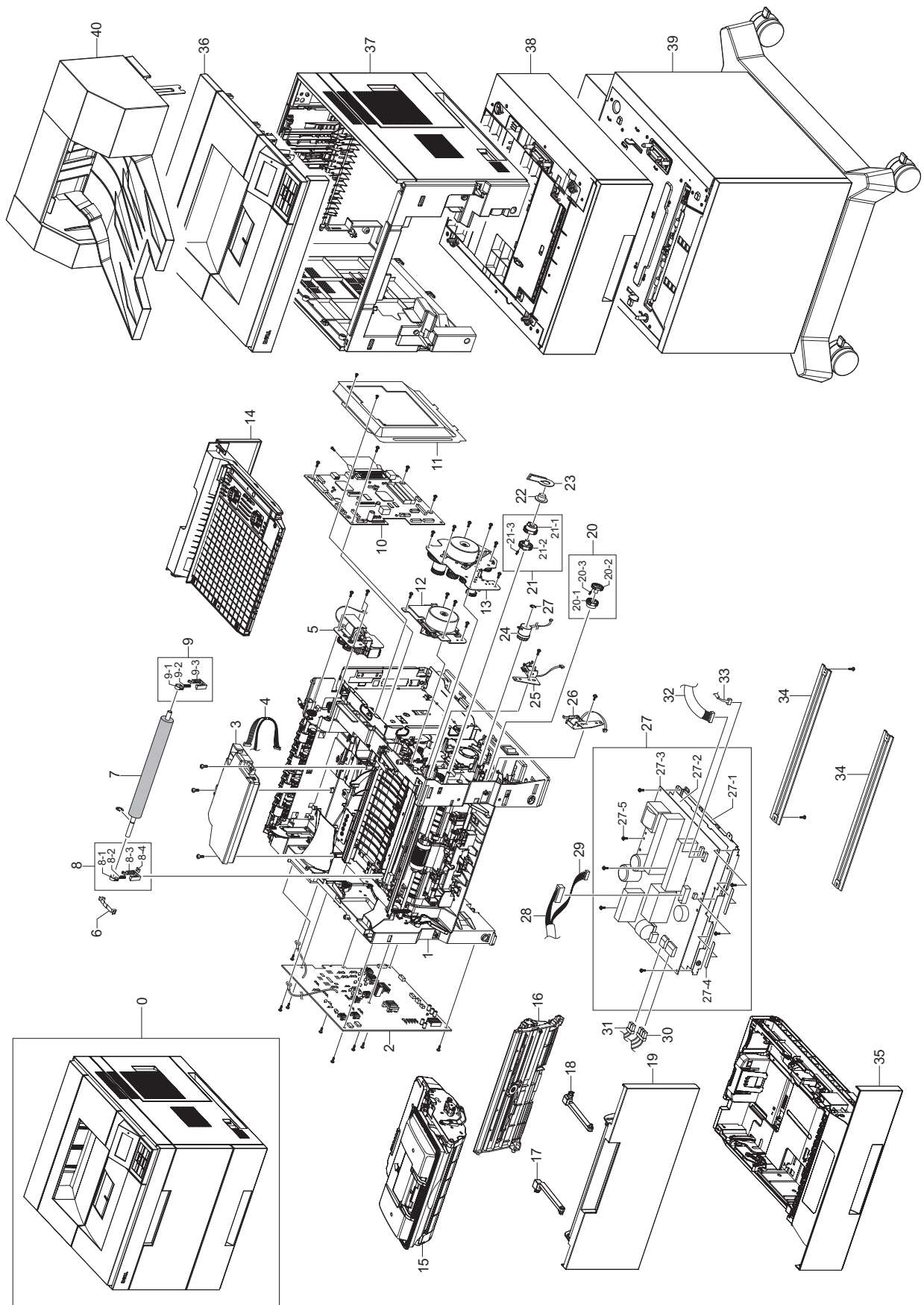
Thumbnail

| | | | |
|---|---|--|---|
|  |  |  |  |
| 5.1 Main | 5.2 Housing_Cover | 5.3 Top Cover | 5.4 Rear Cover |
|  |  |  |  |
| 5.5 Cover MP | 5.6 Knock-Up MP | 5.7 Frame1 | 5.8 Frame2 |
|  |  |  |  |
| 5.9 Exit Solenoid | 5.10 DEVE Motor | 5.11 Main Motor | 5.12 Idle Gear Unit |
|  |  |  |  |
| 5.13 Feed Unit | 5.14 Feed Unit 3X5 | 5.15 LSU Frame | 5.16 REGI |
|  |  |  |  |
| 5.17Fuser Unit | 5.18 Duplex Unit | 5.19 Cassette Unit | 5.20 SCF Unit |

Thumbnail

| | | | |
|---|---|--|---|
|  |  |  |  |
| 5.21 Expander | 5.22 Main_HCF | 5.23 HOU-L_HCF1 | 5.24 HOU-L_HCF2 |
|  |  |  |  |
| 5.25 HOU-L_HCF3 | 5.26 LIFT_L_HCF | 5.27 LIFT_R_HCF | 5.28 CASSETTE_HCF |
|  |  |  |  |
| 5.29 DOOR FRONT_HCF | 5.30 HOU-UPPER_HCF | 5.31 PICK-UP_HCF | 5.32 DRIVE_HCF |
|  |  | | |
| 5.33 SUB-DRIVE_HCF | 5.34 CLUTCH_HCF | | |

5.1 Main



Main Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

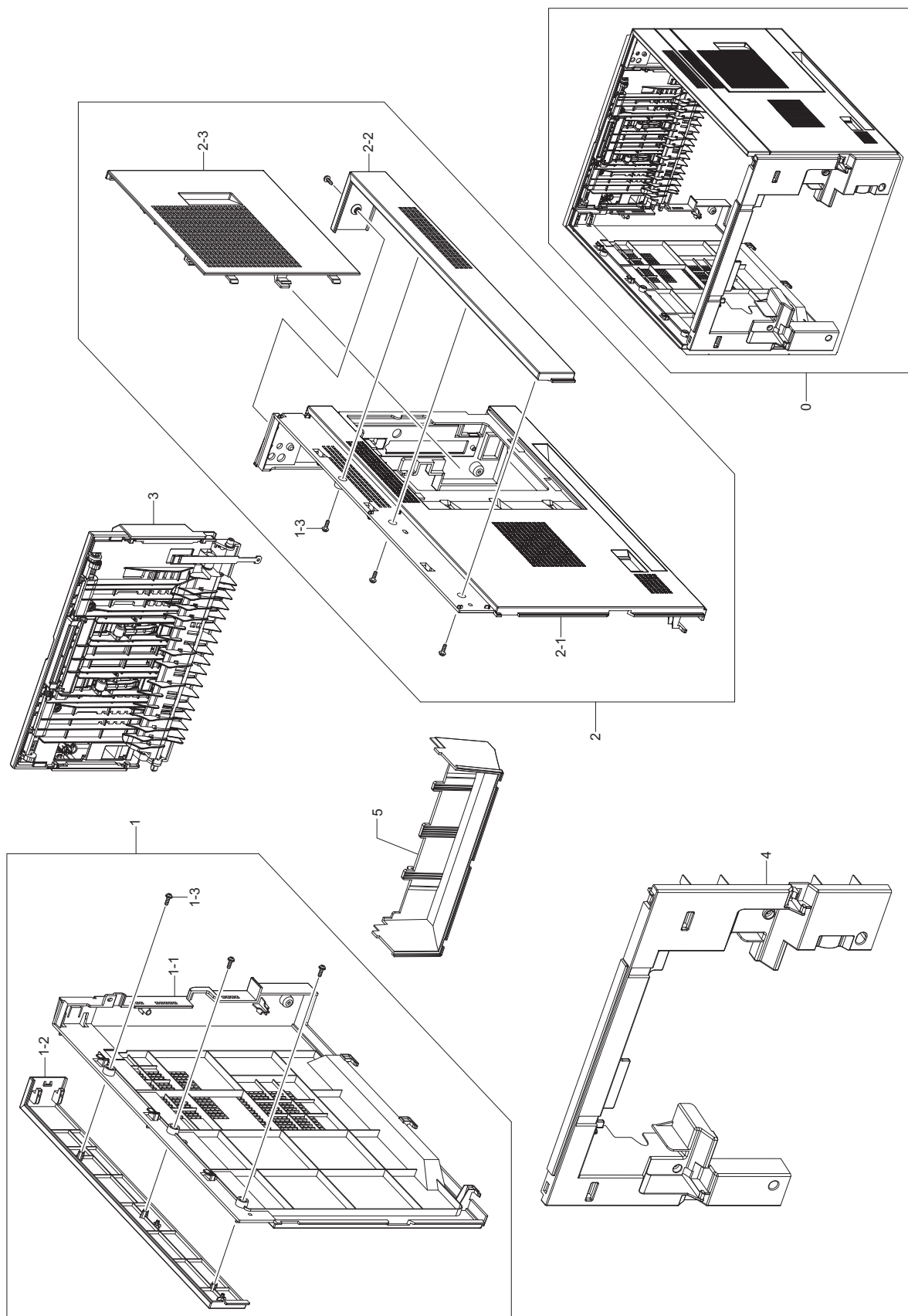
| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|-------------------------------|------|---------|--------|
| 0 | ML-5050ND | SET | 1 | | |
| 1 | JC96-05026A | ELA HOU-FRAME ETC | 1 | SNA | |
| 2 | JC44-00166A | HVPS | 1 | SA | |
| 3 | JC96-04066B | ELA UNIT-LSU | 1 | SNA | |
| 4 | JC39-00436A | CBF HARNESS-LSU | 1 | SA | |
| 5 | JC96-05105A | ELA-EXIT SOLENOID | 1 | SA | |
| 6 | JC72-41292C | PMO-CAP TR | 1 | SA | |
| 7 | JC97-03422A | ROLLER-TRANSFER | 1 | SA | |
| 8 | JC96-01729B | ELA UNIT-HOLDER TR R | 1 | SA | |
| 8-1 | JC72-41142A | PMO-BUSHING TR | 1 | SNA | |
| 8-2 | JC61-00046A | SPRING ETC-TR R HAWK | 1 | SNA | |
| 8-3 | JC72-41145E | PMO-TRANSFER HOLDER R | 1 | SA | |
| 8-4 | JC70-11053A | IPR-PLATE TR | 1 | SNA | |
| 9 | JC96-01729B | ELA UNIT-HOLDER TR R | 1 | SA | |
| 9-1 | JC72-41142A | PMO-BUSHING TR | 1 | SNA | |
| 9-2 | JC61-00046A | SPRING ETC-TR R HAWK | 1 | SNA | |
| 9-3 | JC72-41145E | PMO-TRANSFER HOLDER R | 1 | SA | |
| 10 | JC92-02086A | PBA-MAIN | 1 | SA | |
| 11 | JC61-02566A | BRACKET-SHIELD_CTRL | 1 | SA | |
| 12 | JC96-05103A | ELA-DEVE BLDC | 1 | SA | |
| 13 | JC96-05104A | ELA-MAIN BLDC | 1 | SA | |
| 14 | JC96-05126A | ELA UNIT-DUPLEX | 1 | SA | |
| 15 | JC96-05135A | CARTRIDGE-TONER | 1 | SNA | |
| 16 | JC97-03259A | MEA UNIT-KNOCK_UP MP | 1 | SA | |
| 17 | JC66-01979A | ARM-MP_R | | SA | |
| 18 | JC66-01980A | ARM-MP_L | | SA | |
| 19 | JC97-03264A | MEA UNIT-COVER MP | 1 | SA | |
| 20 | JC97-02226A | MEA UNIT-GEAR PICK UP | 1 | SA | |
| 20-1 | JC66-00870A | GEAR-M-PICK UP CAM | 1 | SNA | |
| 20-2 | JC66-00876A | GEAR-M-PICK UP | 1 | SNA | |
| 20-3 | JC61-00003A | SPRING ETC | 1 | SA | |
| 21 | JC97-01738A | MEA UNIT-GEAR P/UP MP CARDINA | 1 | SA | |
| 21-1 | JC66-00424A | GEAR-MP HOLDER_CAM | 1 | SA | |
| 21-2 | JC66-00423A | GEAR-MP PICK_UP | 1 | SA | |
| 21-3 | JC61-00003A | SPRING ETC | 1 | SA | |
| 22 | JC66-10202A | BEARING-PICK UP | 1 | SA | |
| 23 | JC61-00755A | BRACKET-P-SHAFT MP | 1 | SA | |
| 24 | | | | | |
| 25 | | | | | |

Main Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|--------------------|------|---------|--------|
| 26 | | | | | |
| 27 | JC96-04003C | ELA HOU-SMPS_V1 | 1 | SA | |
| 27-1 | JC63-01133A | SHIELD-SMPS | 1 | SNA | |
| 27-2 | JC62-00311A | INSULATION-SMPS | 1 | SNA | |
| 27-3 | JC44-00140A | SMPS-V1 | 1 | SA | |
| 27-4 | JC63-00707A | SHEET-SMPS_SMALL | 2 | SNA | |
| 27-5 | 6003-000269 | SCREW-TAPTITE | 7 | SA | |
| 28 | | | | | |
| 29 | | | | | |
| 30 | | | | | |
| 31 | | | | | |
| 32 | | | | | |
| 33 | | | | | |
| 34 | JC71-00042A | BAR-P_CROSS BOTTOM | 2 | SA | |
| 35 | JC96-05151A | ELA UNIT-CASSETTE | 1 | SA | |
| 36 | JC96-05127A | ELA-COVER TOP | 1 | SA | |
| 37 | JC96-05143A | ELA HOU-COVER | 1 | SNA | |
| 38 | JC96-05159A | ELA UNIT-SCF | 1 | SNA | |
| 39 | JC96-05232A | ELA HOU-L-HCF | 1 | SNA | |
| 40 | MAS-0001A | UNIT-EXPANDER | 1 | SNA | |

5.2 Housing Cover

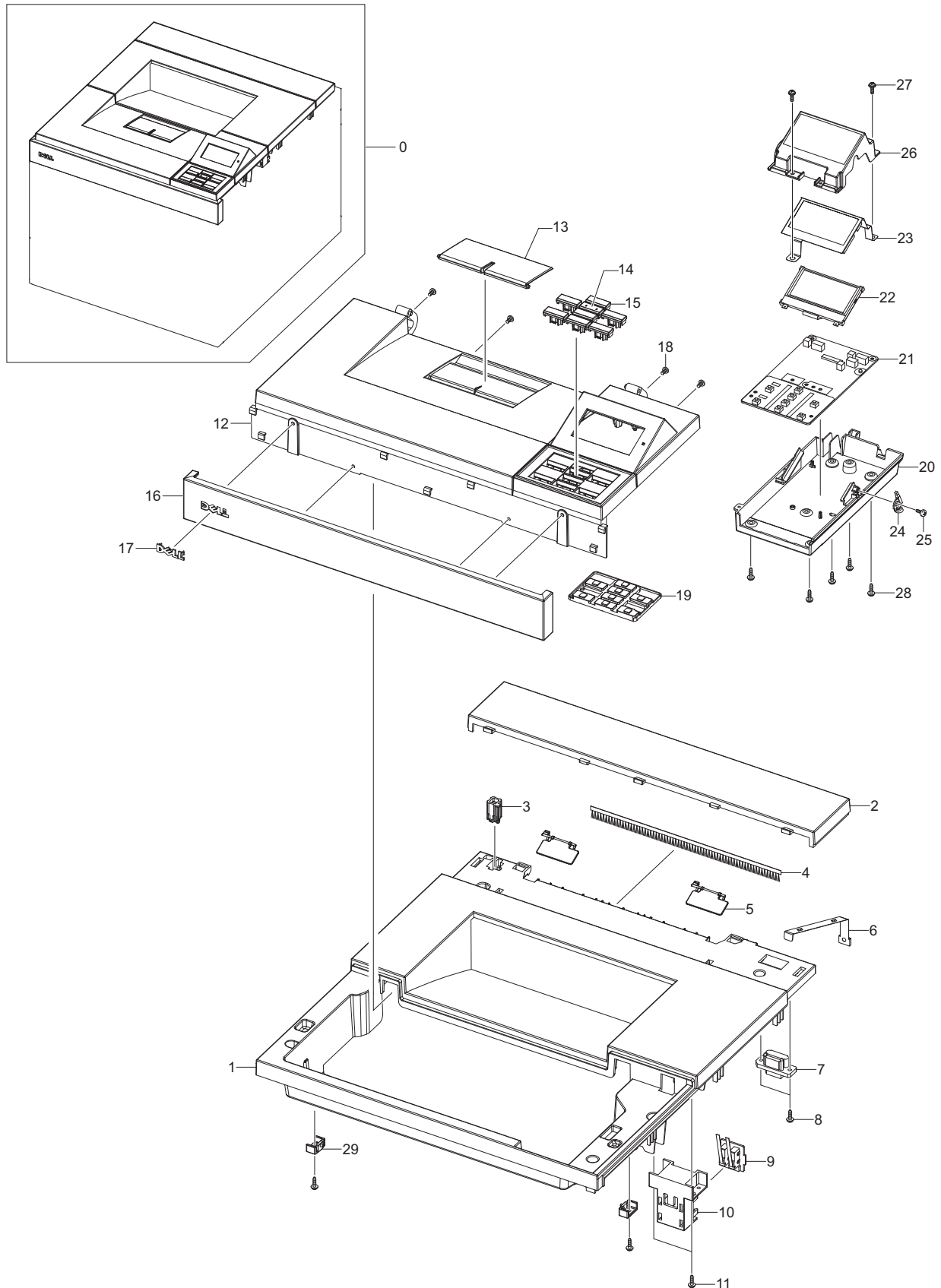


Housing_Cover Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|-------------------|------|---------|--------|
| 0 | JC96-05143A | ELA HOU-COVER | 1 | SNA | |
| 1 | JC97-03234A | MEA-COVER LEFT | 1 | SA | |
| 1-1 | JC63-01949A | COVER-LEFT | 1 | SNA | |
| 1-2 | JC63-01945A | COVER-BAND-LEFT | 1 | SNA | |
| 1-3 | 6003-000196 | SCREW-TAPTITE | 3 | SA | |
| 2 | JC97-03235A | MEA-COVER RIGHT | 1 | SA | |
| 2-1 | JC63-01950A | COVER-RIGHT | 1 | SNA | |
| 2-2 | JC63-01947A | COVER-BAND-RIGHT | 1 | SNA | |
| 2-3 | JC63-01948A | COVER-CONTROL BOX | 1 | SNA | |
| 3 | JC96-05128A | ELA-COVER REAR | 1 | SA | |
| 4 | JC63-01955A | COVER-FRAME EXIT | 1 | SNA | |
| 5 | JC63-01956A | COVER-FRONT INNER | 1 | SNA | |

5.3 Top Cover

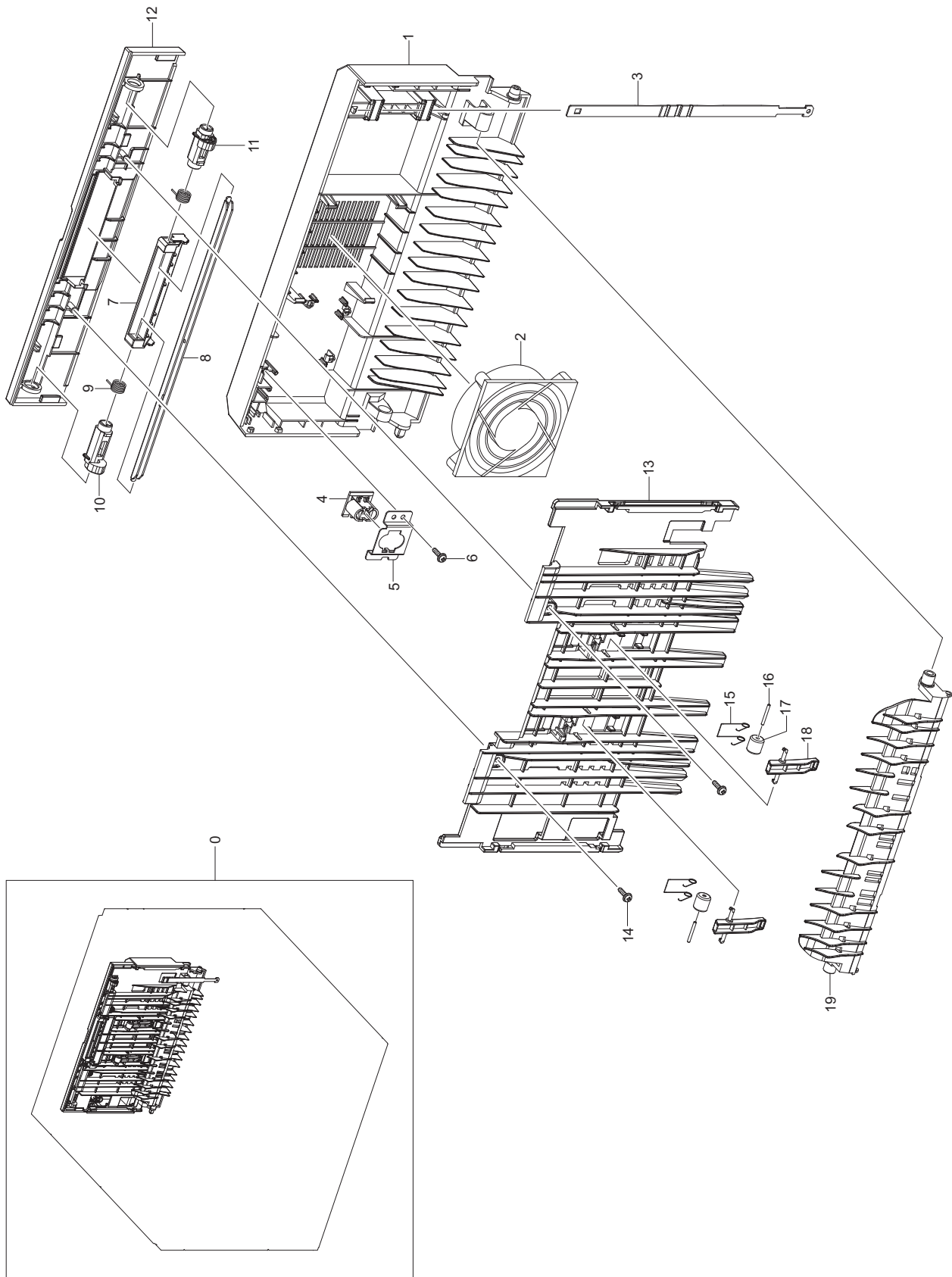


Top Cover Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|----------------------|------|---------|--------|
| 0 | JC96-05127A | ELA-COVER TOP | 1 | SA | |
| 1 | JC63-01954A | COVER-TOP | 1 | SNA | |
| 2 | JC63-01951A | COVER-DUMMY TOP | 1 | SNA | |
| 3 | JC66-01966A | LEVER-EXPANDER | 1 | SNA | |
| 4 | JC75-00095A | MEC-BRUSH ANTISTATIC | 1 | SA | |
| 5 | JC66-00902D | LEVER-STACKING | 2 | SA | |
| 6 | JC63-00836A | GROUND-P-TOP_COVER | 1 | SA | |
| 7 | JC39-00974A | HARNESS-STACKER | 1 | SNA | |
| 8 | 6003-000282 | SCREW-TAPTITE | 2 | SNA | |
| 9 | JC92-02057A | PBA-COVER_OPEN | 1 | SA | |
| 10 | JC67-00316A | CAP-COVER OPEN | 1 | SA | |
| 11 | 6003-000196 | SCREW-TAPTITE | 2 | SA | |
| 12 | JC63-01953A | COVER-OPEN | 1 | SNA | |
| 13 | JC61-02626A | STACKER-RX | 1 | SNA | |
| 14 | JC64-00421A | KEY-ENTER | 1 | SNA | |
| 15 | JC64-00422A | KEY-MENU | 7 | SNA | |
| 16 | JC63-01946A | COVER-BAND FRONT | 1 | SNA | |
| 17 | JC64-00440A | BADGE-DELL | 1 | SNA | |
| 18 | 6003-000115 | SCREW-TAPTITE | 4 | SNA | |
| 19 | JC73-00283A | RUBBER-OPE | 1 | SA | |
| 20 | JC63-01952A | COVER-OPE BOARD | 1 | SNA | |
| 21 | JC92-02017A | PBA-OP_PANEL | 1 | SA | |
| 22 | JC07-00012A | LCD-MODULE | 1 | SA | |
| 23 | JC61-02556A | BRACKET-LCD | 1 | SA | |
| 24 | JC67-00315A | LENS-STATUS | 1 | SA | |
| 25 | 6003-000115 | SCREW-TAPTITE | 1 | SNA | |
| 26 | JC64-00425A | WINDOW-LCD | 1 | SNA | |
| 27 | 6003-000196 | SCREW-TAPTITE | 2 | SA | |
| 28 | 6003-000196 | SCREW-TAPTITE | 5 | SA | |
| 29 | JC61-00656A | STOPPER-M-HINGE OPEN | 2 | SA | |
| 30 | 6003-000196 | SCREW-TAPTITE | 2 | SA | |

5.4 Rear Cover

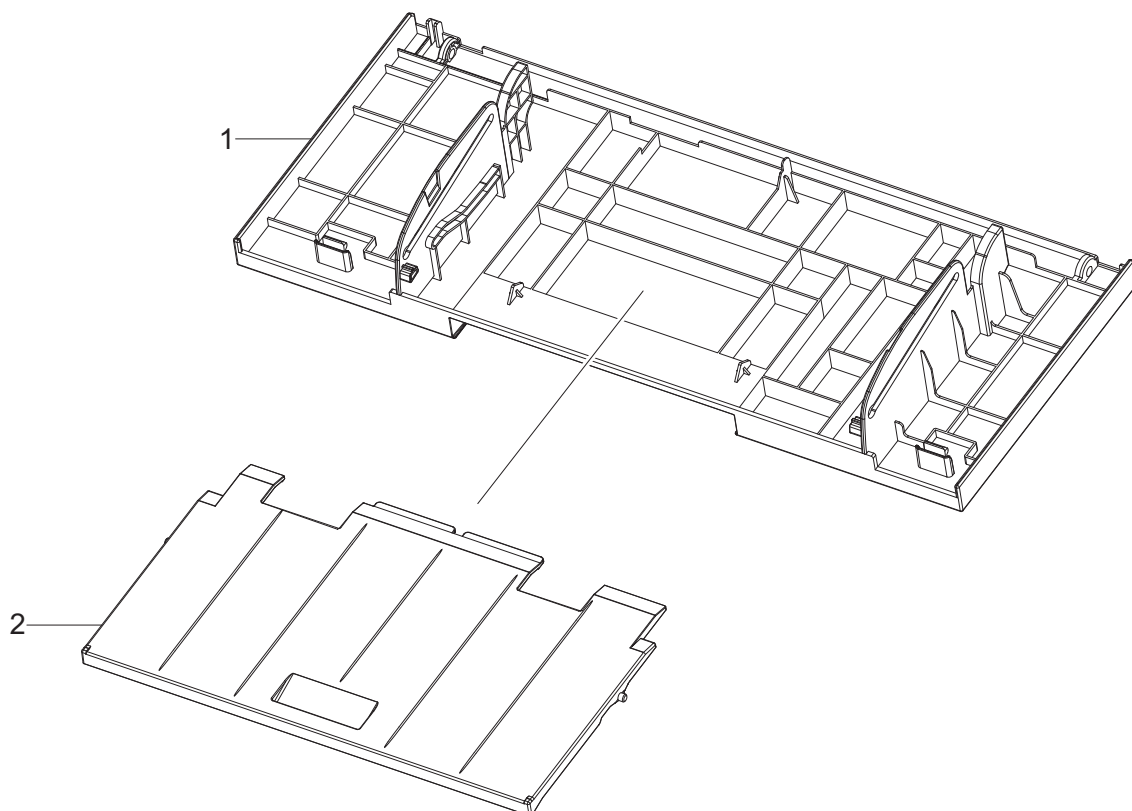
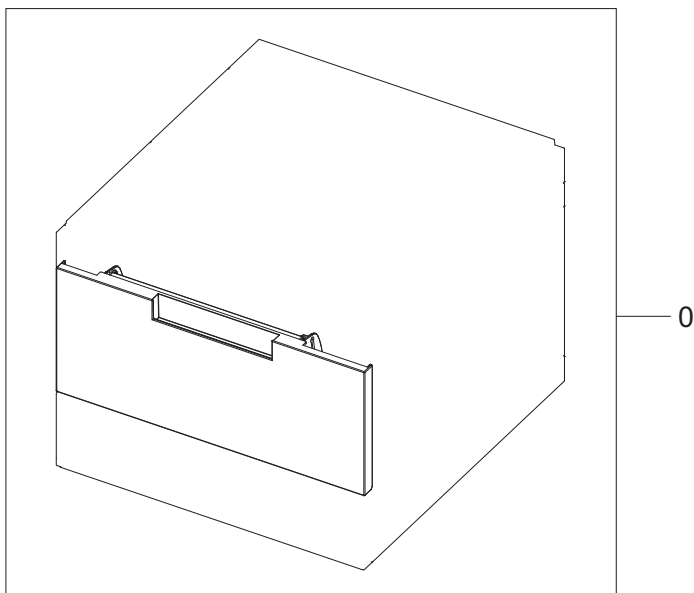


Rear Cover Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|----------------------|------|---------|--------|
| 0 | JC96-05128A | ELA-COVER REAR | 1 | SA | |
| 1 | JC63-01958A | COVER-REAR | 1 | SNA | |
| 2 | JC31-00115A | PAN-BLOCK | 1 | SA | |
| 3 | JC72-01359B | PMO-STRIFE | 1 | SA | |
| 4 | JC39-00993A | HARNESS-REAR-JOINT2 | 1 | SNA | |
| 5 | JC61-02622A | BRACKET-FEMALE | 1 | SNA | |
| 6 | 6003-000196 | SCREW-TAPTITE | 1 | SA | |
| 7 | JC64-00420A | HANDLE-REAR COVER | 1 | SA | |
| 8 | JC61-01404A | BRACKET-P-HANDLE SCF | 1 | SNA | |
| 9 | 6107-001268 | SPRING-TS | 2 | SA | |
| 10 | JC64-00423A | LOCKER-REAR_L | 1 | SNA | |
| 11 | JC64-00424A | LOCKER-REAR_R | 1 | SNA | |
| 12 | JC63-01957A | COVER-BAND-REAR | 1 | SNA | |
| 13 | JC61-02637A | GUIDE-STACKER REAR | 1 | SNA | |
| 14 | 6003-000196 | SCREW-TAPTITE | 2 | SA | |
| 15 | 6107-001160 | SPRING-TS | 2 | SA | |
| 16 | JC70-20901A | IEX-SHAFT IDLE_F/UP | 2 | SA | |
| 17 | JC72-20902A | PEX-ROLLER F/UP | 2 | SA | |
| 18 | JC61-00658A | GUIDE-M-DUPLEX | 2 | SA | |
| 19 | JC61-01217A | GUIDE-M_EXIT | 1 | SA | |

5.5 Cover MP

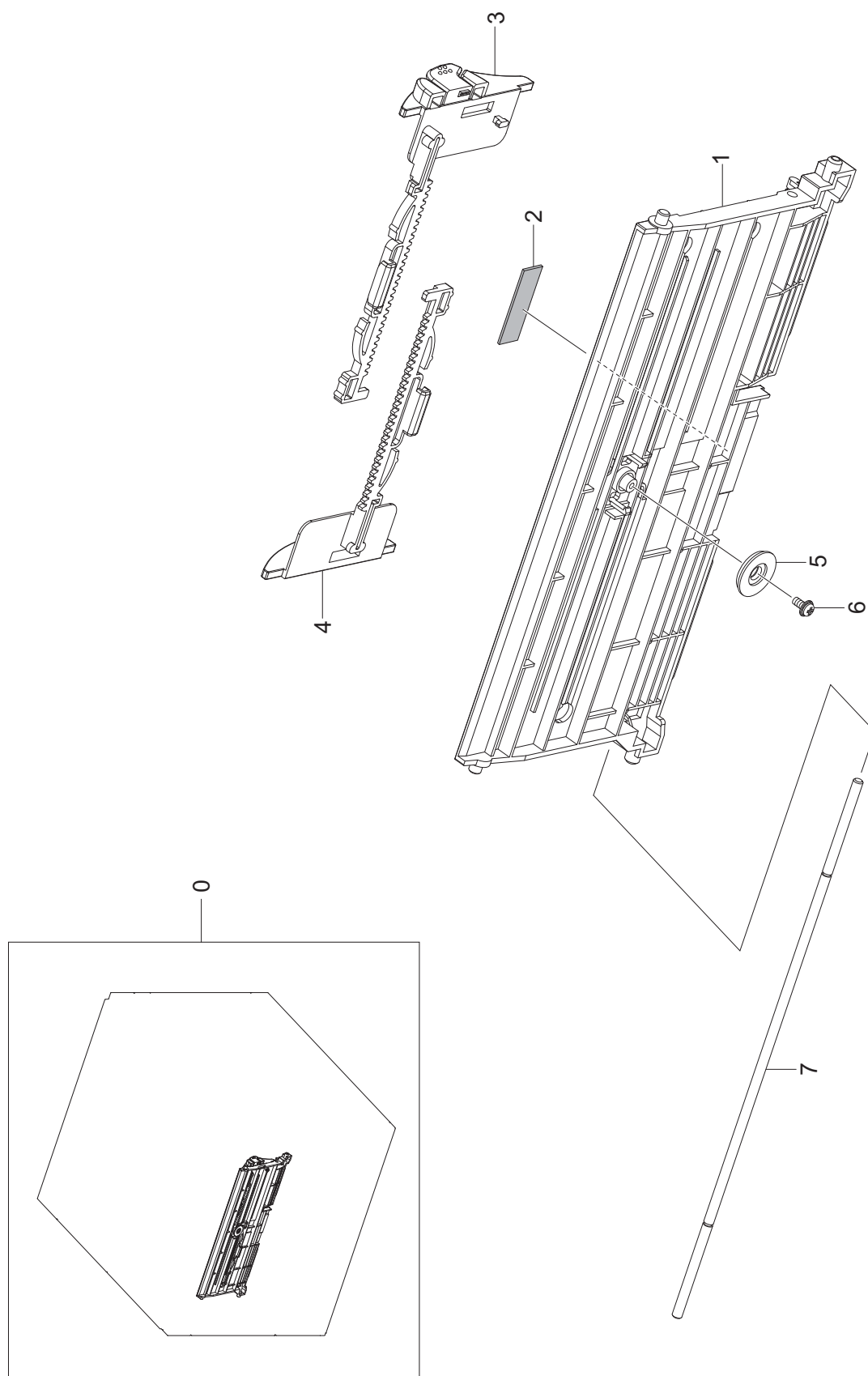


Cover MP Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|-------------------|------|---------|--------|
| 0 | JC97-03264A | MEA UNIT-COVER MP | 1 | SA | |
| 1 | JC63-01941A | COVER-MP | 1 | SA | |
| 2 | JC63-01966A | TRAY-ASF_INPUT | 1 | SA | |

5.6 Knock-Up MP

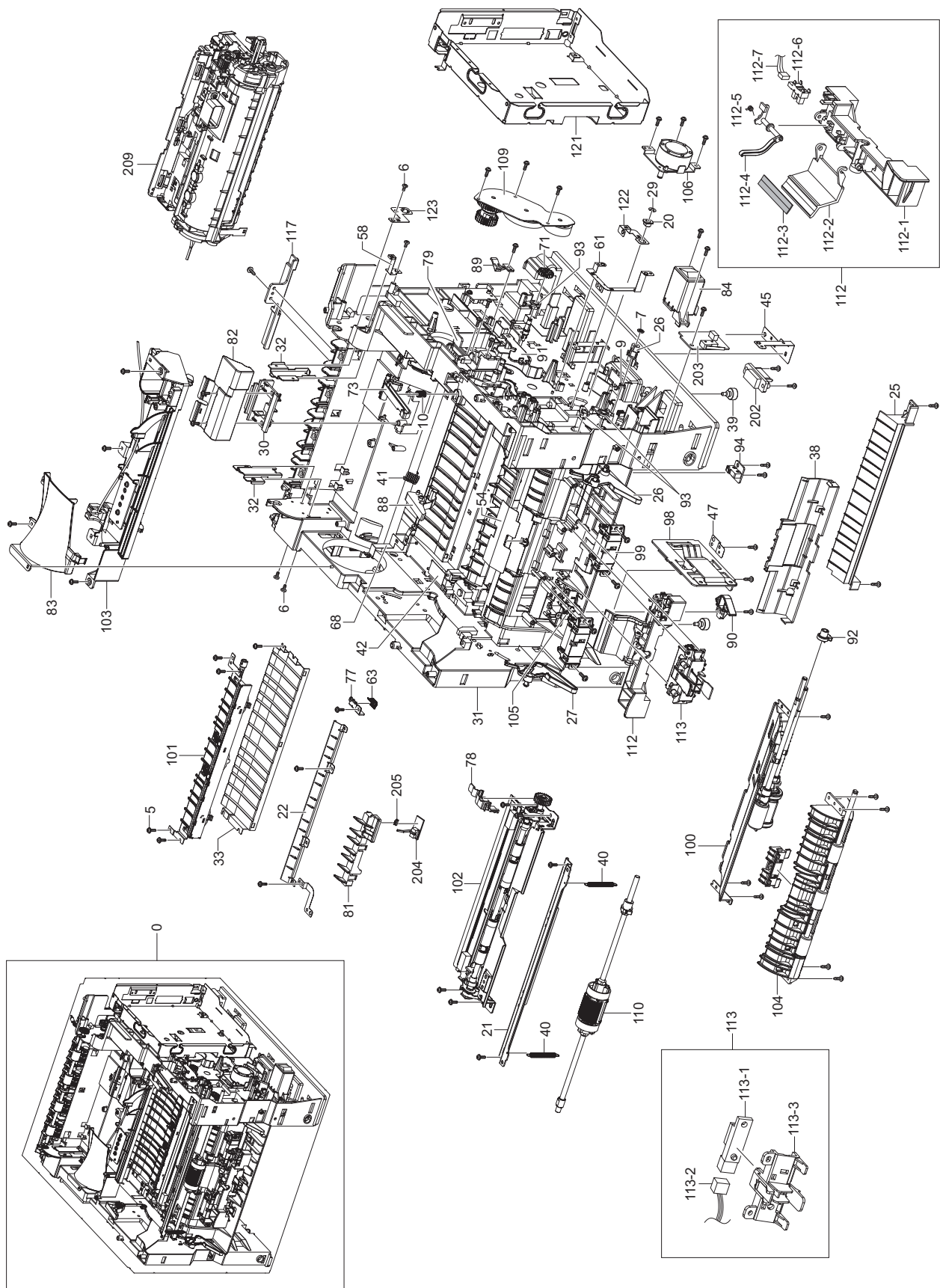


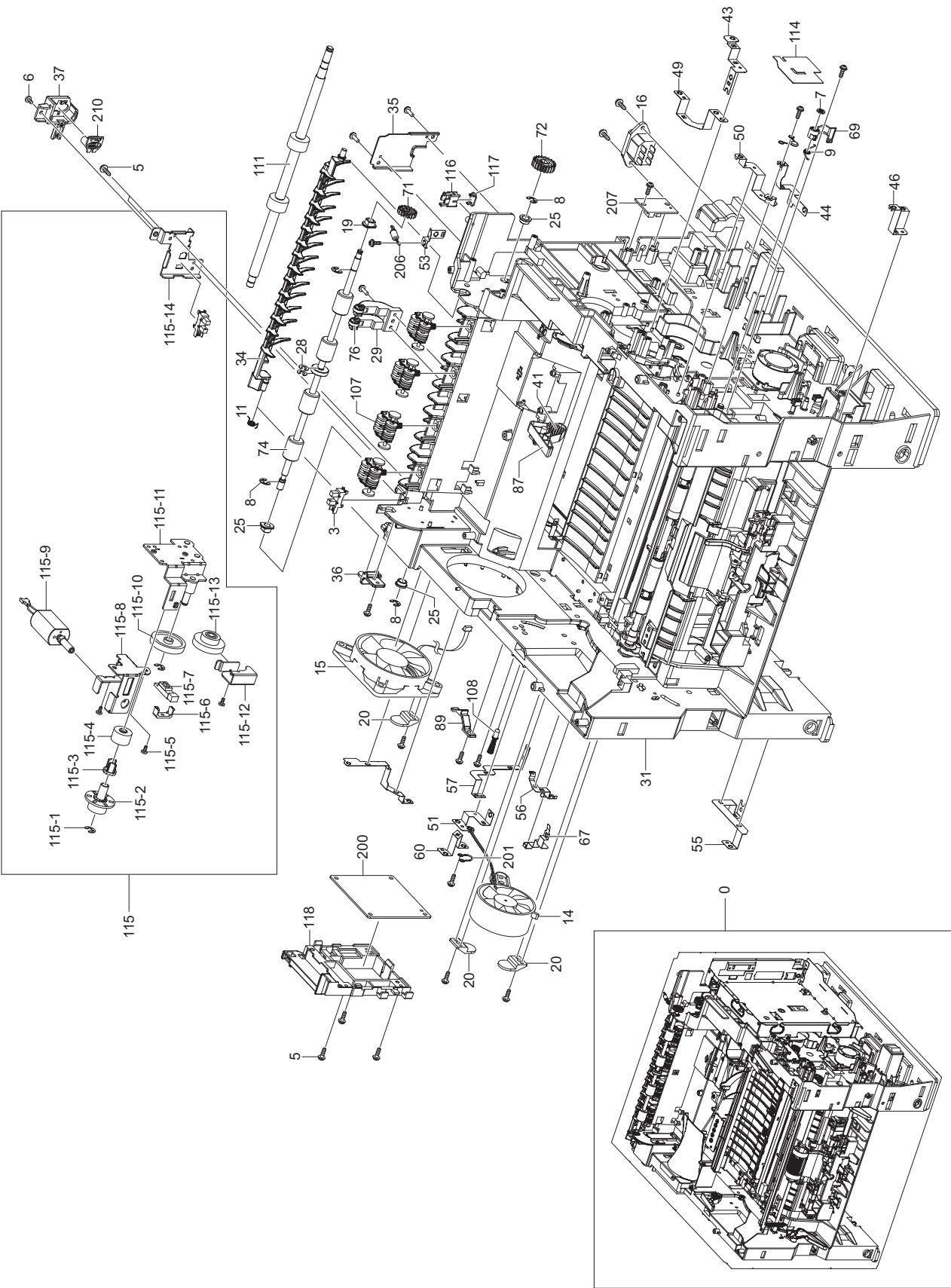
Knock-Up MP Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|----------------------|------|---------|--------|
| 0 | JC97-03259A | MEA UNIT-KNOCK_UP MP | 1 | SA | |
| 1 | JC61-02644A | PLATE-GUIDE_SUPPORT | 1 | SA | |
| 2 | JC74-00011A | MPR-PAD KNOCK UP | 1 | SA | |
| 3 | JC72-01005C | PMO SIDE-GUIDE MP(L) | 1 | SA | |
| 4 | JC61-02645A | GUIDE-SIDE_MP_R | 1 | SA | |
| 5 | JG66-40003A | GEAR PINION | 1 | SA | |
| 6 | 6003-000264 | SCREW TAPTITE | 1 | SNA | |
| 7 | JC66-00895A | SHAFT-REINFORCEMENT | 1 | SNA | |

5.7 Frame1





Frame Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|------------------------------|-------|---------|--------|
| 0 | JC96-05026A | ELA HOU-FRAME ETC | 1 | SA | |
| 1 | 0205-001002 | GREASE-BEARING | 0.319 | SNA | |
| 2 | 0205-001067 | GREASE-GRAPHITE | 0.005 | SNA | |
| 3 | 0604-001095 | PHOTO-INTERRUPTER | 1 | SA | |
| 4 | 0604-001381 | PHOTO-INTERRUPTER | 1 | SA | |
| 5 | 6003-000196 | SCREW-TAPTITE | 164 | SA | |
| 6 | 6003-000269 | SCREW-TAPTITE | 5 | SA | |
| 7 | 6003-000282 | SCREW-TAPTITE | 6 | SNA | |
| 8 | 6004-000001 | RING-CS | 2 | SA | |
| 9 | 6044-000231 | RING-E | 4 | SA | |
| 10 | 6107-001170 | SPRING-TS | 2 | SA | |
| 11 | 6107-001172 | SPRING-CS | 1 | SA | |
| 12 | 6107-001500 | SPRING-TS | 1 | SNA | |
| 13 | JB39-00017A | CBF HARNESS-EARTH (TX MOTOR) | 1 | SC | |
| 14 | JB39-40532A | CBF HARNESS-EARTH OPE | 2 | SA | |
| 15 | JC63-00050A | FAN | 1 | SA | |
| 16 | JC31-00115A | FAN | 1 | SA | |
| 17 | JC39-00624A | HARNESS-INLET | 1 | SA | |
| 18 | JC39-00919A | HARNESS-SMPS_HVPS | 1 | SA | |
| 19 | JC61-00387A | SPRING ETC-PAD | 1 | SA | |
| 20 | JC61-00423A | BUSH-6_D | 3 | SA | |
| 21 | JC61-00667A | STOPPER-M-FAN80 | 3 | SA | |
| 22 | JC61-00675A | GUIDE-P_REGI UPPER | 1 | SA | |
| 23 | JC61-00691A | GUIDE-PLATE PAPER | 1 | SA | |
| 24 | JC61-00772A | BUSH-DEV DR | 2 | SNA | |
| 25 | JC96-05362A | ELA HOU-GUIDE_FRONT | 1 | SNA | |
| 26 | JC61-01243A | HOLDER-M-PICK_UP | 1 | SNA | |
| 27 | JC61-01249A | STOPPER-M-KNOCK UP MP_R | 1 | SA | |
| 28 | JC61-01250A | STOPPER-M-KNOCK UP MP_L | 1 | SA | |
| 29 | JC61-01550A | STOPPER-SPACER | 3 | SNA | |
| 30 | JC61-01768A | HOLDER-IDLE ENV | 1 | SNA | |
| 31 | JC61-02465A | HOUSING-TERMINAL | 1 | SA | |
| 32 | JC61-02495A | FRAME-BASE_CRANE | 1 | SNA | |
| 33 | JC61-02556A | BRACKET-SUPPORT_STACKER | 2 | SNA | |
| 34 | JC61-02558A | GUIDE-TRANSFER_REAR | 1 | SNA | |
| 35 | JC61-02559A | GUIDE-DEFLECTOR | 1 | SA | |
| 36 | JC61-02625A | BRACKET-SUPPORT_FRAME | 1 | SNA | |
| 37 | JC61-02628A | HOLDER-GUIDE_DEFLECTOR | 1 | SA | |
| 38 | JC61-02634A | BRACKET-MALE_REAR | 1 | SNA | |

Frame Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|------------------------|------|---------|--------|
| 39 | JC61-02648A | GUIDE-PATH | 1 | SA | |
| 40 | JC61-40001A | FOOT-ML80 | 2 | SA | |
| 41 | 6107-001517 | SPRING ES | 2 | SNA | |
| 42 | JC61-70932A | SPRING ETC-GUIDE DEVE | 2 | SA | |
| 43 | JC63-00459A | SHEET-SCAN LOWER | 1 | SNA | |
| 44 | JC63-00669A | GROUND-P_GUIDE TR | 1 | SNA | |
| 45 | JC63-00672A | GROUND--REGI ROLLER | 1 | SNA | |
| 46 | JC63-00673A | GROUND-P-SCF_MAIN | 1 | SNA | |
| 47 | JC63-00674A | GROUND-P-PICK_UP_MAIN | 1 | SNA | |
| 48 | JC63-00675A | GROUND-P-PAPER_SIZE | 1 | SNA | |
| 49 | JC63-00676A | GROUND-P-FUSER | 1 | SNA | |
| 50 | JC63-00677A | GROUND-P-MOTOR_DEVE | 1 | SNA | |
| 51 | JC63-00678A | GROUND-P-PICK_UP_MP | 1 | SNA | |
| 52 | JC63-00679A | GROUND-P-ZENER | 1 | SNA | |
| 53 | JC63-00680A | GROUND-P-GUIDE DUP | 1 | SNA | |
| 54 | JC63-00875A | GROUND-P-BRUSH | 1 | SNA | |
| 55 | JC63-00911A | SHEET-GUIDE PATH | 1 | SNA | |
| 56 | JC63-01748A | GROUND-HVPS_LOWER | 1 | SNA | |
| 57 | JC63-01757A | GROUND-OPC | 1 | SNA | |
| 58 | JC63-01844A | GROUND-HVPS_UPPER | 1 | SNA | |
| 59 | JC63-01864A | GROUND-STACKER | 1 | SNA | |
| 60 | JC63-01865A | GROUND-FUSER-DRIVER | 1 | SNA | |
| 61 | JC63-01866A | GROUND-TONER_CONNECTOR | 1 | SNA | |
| 62 | JC63-01867A | GROUND-MOTOR-MAIN | 1 | SNA | |
| 63 | 6107-001516 | SPRING-CS | 1 | SNA | |
| 64 | JC65-00001A | TERMINAL-P_PTL | 2 | SA | |
| 65 | JC65-00006A | TERMINAL-P_HV CARDINAL | 1 | SA | |
| 66 | JC65-00008A | TERMINAL-P-TR_KESTREL | 1 | SA | |
| 67 | JC65-00010B | TERMINAL-GUIDE_FRONT | 1 | SNA | |
| 68 | JC65-00034A | TERMINAL-THV | 1 | SNA | |
| 69 | JC65-00039A | TERMINAL-SAW_FRAME1 | 1 | SNA | |
| 70 | JC66-00377A | CAM-M-PICK_UP | 1 | SA | |
| 71 | JC66-00420A | GEAR-REGI Z25 | 1 | SA | |
| 72 | JC66-00674A | GEAR-M-EXIT Z17 | 2 | SA | |
| 73 | JC66-00854A | GEAR-M-EXIT DUP Z21 | 1 | SA | |
| 74 | JC66-00877A | LEVER-M-BRACKET_SWING | 1 | SNA | |
| 75 | JC66-00883A | RILLER-EXIT_F/DOWN | 1 | SNA | |
| 76 | JC66-00888A | SHAFT-M BELT_GEAR | 1 | SNA | |
| 77 | JC66-01142A | ROLLER-SLIDE A | 2 | SNA | |

Frame Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|--------------------------|------|---------|--------|
| 78 | JC67-00036A | CAP-M-WIRE PTL LOWER | 1 | SNA | |
| 79 | JC67-00039A | CAP-M-GEAR | 1 | SA | |
| 80 | JC67-00092A | CAP-M-DEVE_MOTOR | 1 | SNA | |
| 81 | JC67-00093A | CAP-M-GUIDE_HARNESS | 1 | SNA | |
| 82 | JC67-00097A | CAP-M_SENSOR_FEED | 1 | SNA | |
| 83 | JC67-00099A | CAP-M-HOUS_TERM | 1 | SNA | |
| 84 | JC67-00189A | DUCT-FAN_MAIN | 1 | SA | |
| 85 | JC67-00300A | CAP-POWER | 1 | SA | |
| 86 | JC68-01760A | LABEL-INFORMATION | 1 | SNA | |
| 87 | JC70-00339A | IPR-P_GROUND PLATE PAPER | 1 | SA | |
| 88 | JC72-00317A | PMO-GUIDE DEVE L | 1 | SA | |
| 89 | JC72-00318A | PMO-GUIDE DEVE R | 1 | SA | |
| 90 | JC72-00983A | PMO-LOCKER CST | 2 | SA | |
| 91 | JC72-01356A | PMO-DUMMY_DEVE | 1 | SNA | |
| 92 | JC72-01362A | PMO-M-CAM_PICK UP | 1 | SNA | |
| 93 | JC72-41191B | PMO-BEARING SHAFT | 4 | SA | |
| 94 | JC92-01261C | PBA SUB-FUSER_SW | 1 | SA | |
| 95 | JC92-01516A | PBA SUB-PTL2 | 1 | SA | |
| 96 | JC96-01579A | ELA HOU-MOTOR GND | 1 | SA | |
| 97 | JC96-01772A | ELA HOU-VARISTOR | 1 | SA | |
| 98 | JC96-02127B | ELA UNIT-CST_SENSOR | 1 | SA | |
| 99 | JC96-03421A | ELA UNIT-FEED2 IDLE | 2 | SA | |
| 100 | JC96-03422A | ELA UNIT-PICK UP | 1 | SA | |
| 101 | JC96-03425B | ELA UNIT-FEED_3X5 | 1 | SA | |
| 102 | JC96-03959A | ELA UNIT-REGI | 1 | SA | |
| 103 | JC96-03960C | ELA HOU-FRAME_LSU_LO | 1 | SA | |
| 104 | JC96-04119B | ELA UNIT-FEED | 1 | SA | |
| 105 | JC96-04120B | ELA HOU-SENSOR_CHECK | 1 | SNA | |
| 106 | JC97-01034A | MEA RACK-EXIT ROLLER | 4 | SA | |
| 107 | JC97-01401A | MEA UNIT-TERMINAL:TR | 1 | SA | |
| 108 | JC97-02238A | MEA UNIT-GEAR IDLE | 1 | SA | |
| 109 | JC97-02649A | MEA UNIT-PICK UP MP | 1 | SA | |
| 110 | JC97-02662A | MEA UNIT-EXIT DUP | 1 | SA | |
| 111 | JC96-05150A | ELA-HOU BASE HOLDER | 1 | SNA | |
| 112 | JC97-03266A | MEA_RETARD | 1 | SA | |
| 112-1 | JC61-02643A | FRAME-HOLDER_PAD_MP | 1 | SA | |
| 112-2 | JC61-02642A | HOLDER-PAD_MP | 1 | SA | |
| 112-3 | JC73-00132A | RPR-FRICTION PAD MP | 1 | SA | |
| 112-4 | JC72-01365A | PMO-ACTUATOR EMPTY MP | 1 | SA | |

Frame Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

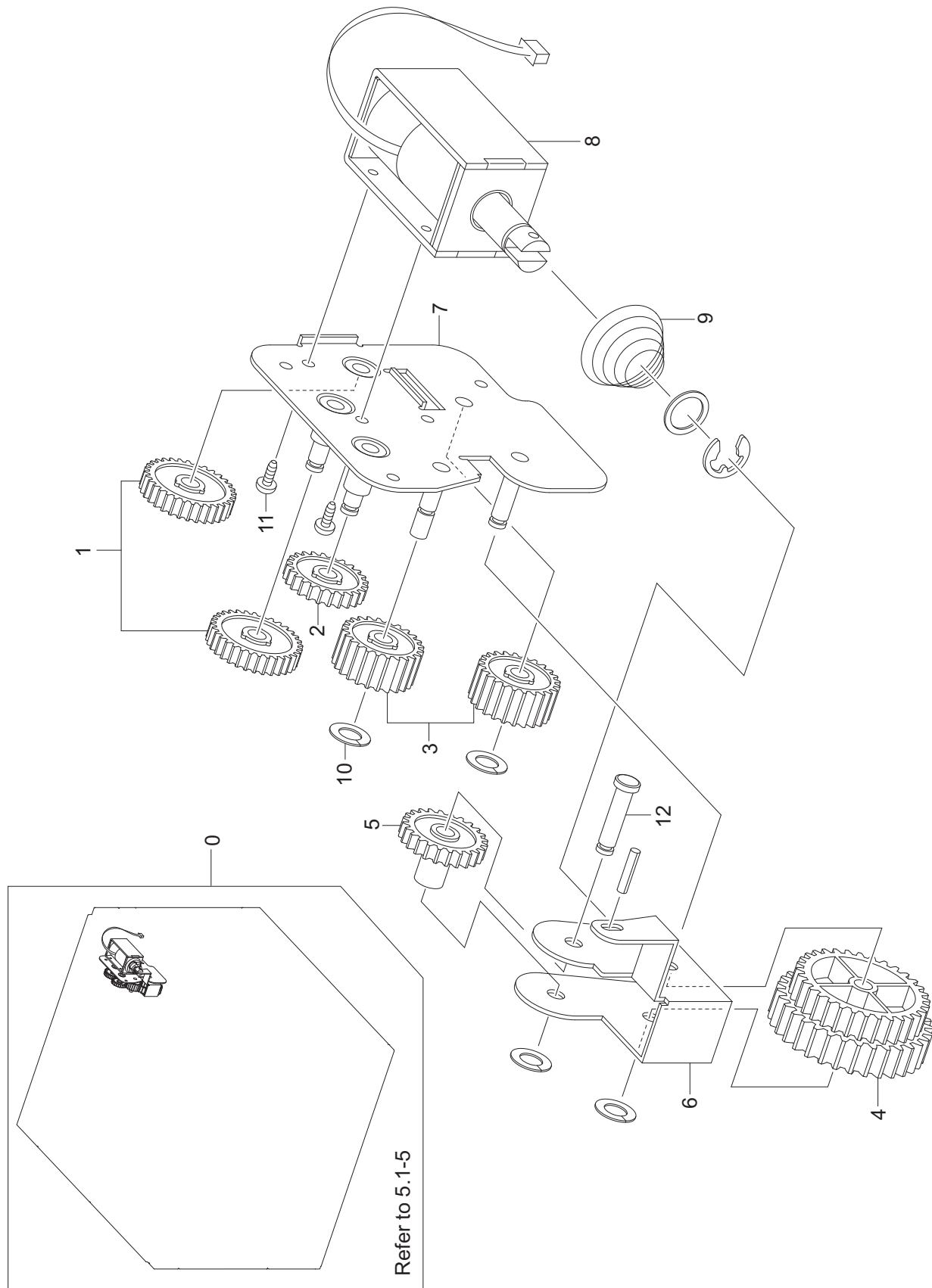
| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|---------------------------------|------|---------|--------|
| 112-5 | JC61-70965A | SPRING ETC-EMPTY | 1 | SA | |
| 112-6 | 0604-001095 | PHOTO-INTERRUPTER | 1 | SA | |
| 112-7 | JC39-00451A | CBF HARNESS-MP EMPTY | 1 | SC | |
| 113 | JC96-04120B | ELA HOU-SENSOR_CHECK | 1 | SNA | |
| 113-1 | 0604-001381 | PHOTO-INTERRUPTER | 1 | SA | |
| 113-2 | JC39-00451A | CBF HARNESS-MP_EMPTY | 1 | SC | |
| 113-3 | JC67-00320A | CAP-SENSOR_CHECK | 1 | SNA | |
| 114 | JC96-01563A | ELA UNIT-FUSER DRIVE | 1 | SA | |
| 114-1 | 6031-001255 | WASHER-PLAIN | 3 | SA | |
| 114-2 | JC66-01954A | GEAR-ENCORDER | 1 | SNA | |
| 114-3 | JC70-00557A | HUB-CLUTCH | 1 | SNA | |
| 114-4 | JC66-01955A | GEAR-HUB_CAM | 1 | SNA | |
| 114-5 | 6001-000485 | SCREW-MACHINE | 2 | SNA | |
| 114-6 | JC61-02599A | HOLDER-PHOTO_SIDE | 1 | SA | |
| 114-7 | 0604-001381 | PHOTO-INTERRUPTER(GP2A230LR50F) | 1 | SA | |
| 114-8 | JC61-02592A | BRACKET-HOLDER_MOTOR | 1 | SNA | |
| 114-9 | JC31-00094A | MOTOR DC | 1 | SA | |
| 114-10 | JC66-01956A | GEAR-REDUCTION | 1 | SNA | |
| 114-11 | JC61-02594A | BRACKET-RELEASE_MAIN | 1 | SNA | |
| 114-12 | JC61-02598A | BRACKET-COVER_GEAR | 1 | SNA | |
| 114-13 | JC66-01957A | GEAR-WORM_WHEEL | 1 | SNA | |
| 114-14 | JC61-02595A | BRACKET-HOLDER_PHOTO | 1 | SNA | |
| 114-15 | 0604-001095 | PHOTO-INTERRUPTER | 1 | SA | |
| 115 | JC61-02609A | HOLDER-LIFE_CONNECTOR | 1 | SNA | |
| 116 | JC61-02623A | HOLDER-HOOK_CONNECTOR | 1 | SA | |
| 117 | JC67-00329A | CAP-TONER_CONNECTOR | 1 | SA | |
| 118 | JC67-00330A | CAP-FUSER_HARNESS | 1 | SA | |
| 119 | JC61-02614A | HOLDER ACT-DUPLEX | 1 | SNA | |
| 120 | JC66-02102A | ROLLER-DECURL | 4 | SNA | |
| 121 | JC63-01870A | MEA UNIT-SHIELD CTRL | 1 | SA | |
| 122 | JC63-02080A | GROUND-FEED-SHAFT | 1 | SNA | |
| 123 | JC63-02066A | GROUND-2ND_SHAFT | 1 | SNA | |
| 124 | JC63-02068A | GROUND-3RD_SHAFT | 1 | SNA | |
| 125 | JC61-01735A | HOLDER-FAN | 1 | SA | |
| 126 | JC63-01998A | SHEET COVER-HOLE | 1 | SA | |
| 200 | | PBA-TONER_CONNECTOR_CRANE | 1 | SA | |
| 201 | | GND-HARNESS-ZENOR | 1 | SA | |
| 202 | | CONNECTOR-SCF-FRAME | 1 | SA | |
| 203 | JC96-01772A | ELA HOU-VARISTOR | 1 | SA | |

Frame Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|---------------------------|------|---------|--------|
| 204 | JC92-01262C | PBA SUB-FEED-SENSOR | 1 | SA | |
| 205 | | CBF HARNESS | 1 | SA | |
| 206 | | 1000Mohm | 1 | SNA | |
| 207 | | SUB-SEN_DETECT_DPX | 1 | SNA | |
| 208 | | PBA DPX-JAM | 1 | SA | |
| 209 | JC96-04854A | ELA UNIT-FUSER 2LAMP 110V | 1 | SA | |
| | JC96-04854B | ELA UNIT-FUSER 2LAMP 220V | 1 | SA | |

5.9 Exit Solenoid

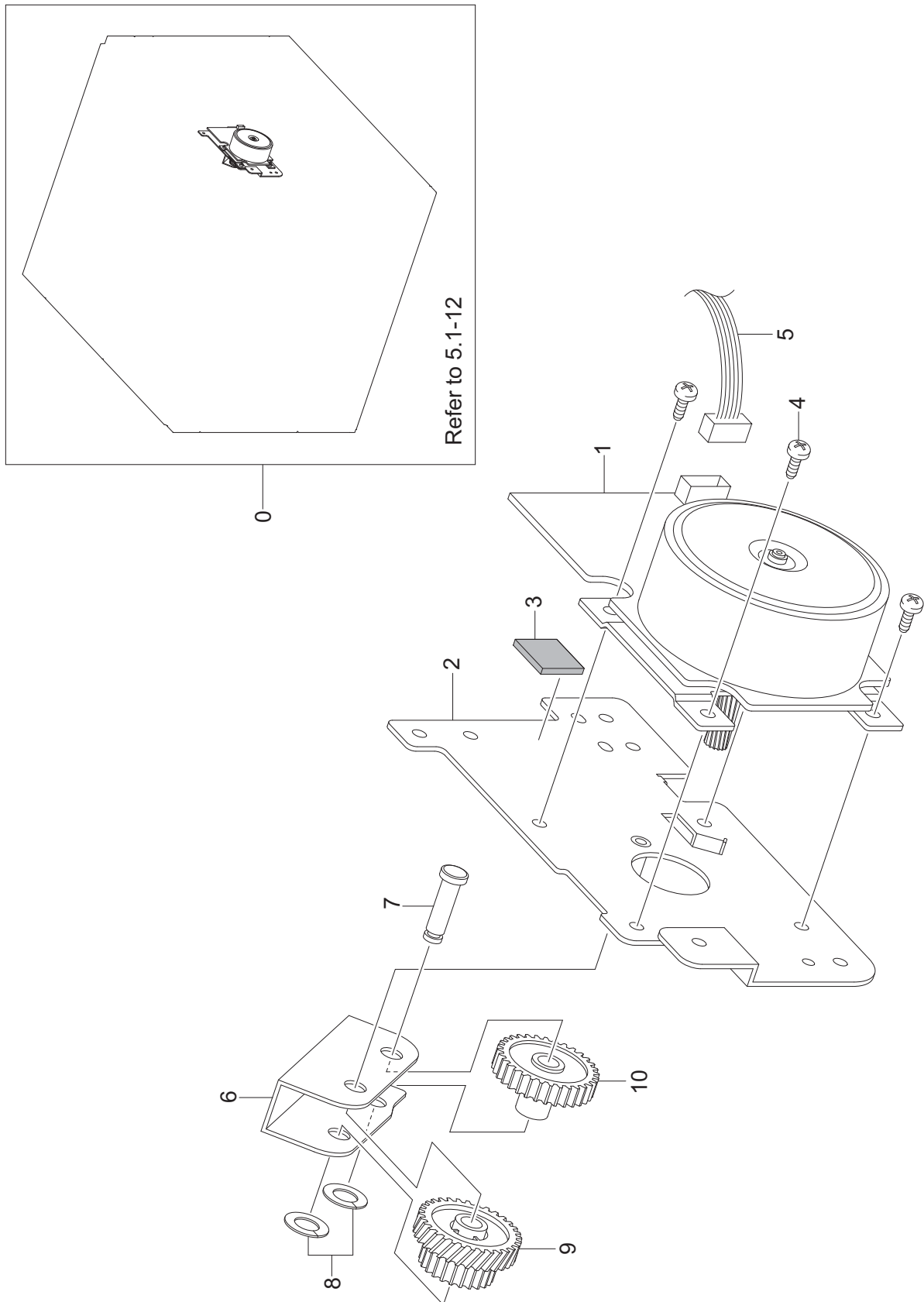


Exit Solenoid Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|------------------------|------|---------|--------|
| 0 | JC96-05105A | ELA-EXIT SOLENOID | 1 | SA | |
| 1 | JC66-00869A | GEAR IDLE 25 | 2 | SNA | |
| 2 | JC66-40911A | GEAR DP IDLE | 1 | SA | |
| 3 | JC66-00100A | GEAR-6 | 2 | SNA | |
| 4 | JC66-00856A | GEAR-M-RDCN EXIT | 1 | SNA | |
| 5 | JC66-00855A | GEAR-M-SWING DUPLEX | 1 | SNA | |
| 6 | JC61-01202A | BRACKET-P-LINK SWING | 1 | SNA | |
| 7 | JC61-01205A | BRACKET-P-EXIT | 1 | SNA | |
| 8 | JC33-00033A | SOLENOID-DUPLEX | 1 | SNA | |
| 9 | JC61-70915A | SPRING ETC-SOLENOID DP | 1 | SA | |
| 10 | 6031-001255 | WASHER-PLAIN | 4 | SA | |
| 11 | 6001-000130 | SCREW-MACHINE | 2 | SNA | |
| 12 | JC66-00916A | SHAFT-SWING DUPLEX | 1 | SNA | |

5.10 DEVE Motor

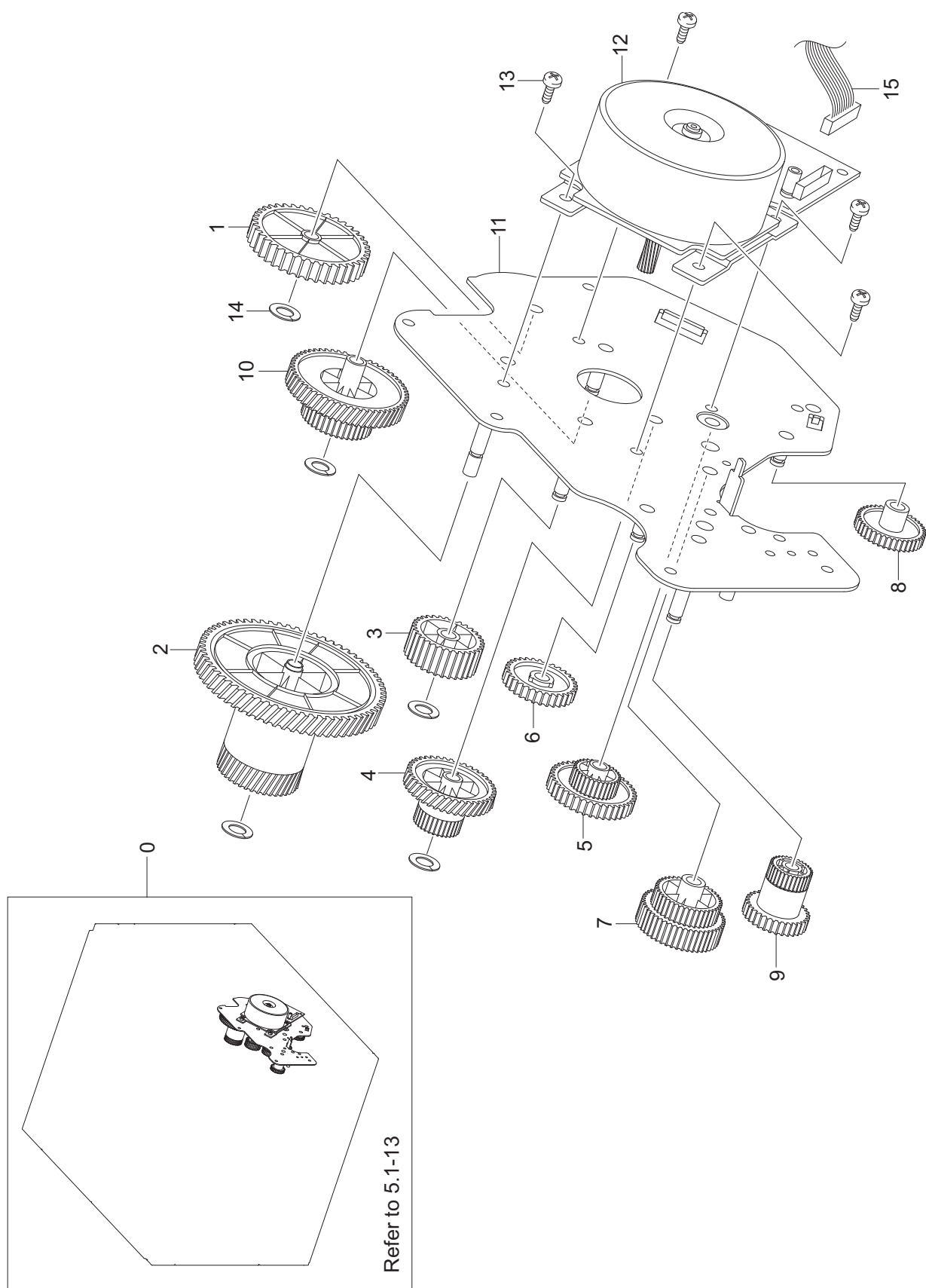


DEVE Motor Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|-----------------------|------|---------|--------|
| 0 | JC96-05103A | ELA-DEVE BLDC | 1 | SA | |
| 1 | JC31-00039B | MOTOR BLDC | 1 | SNA | |
| 2 | JC61-01201A | BRACKET-P-DEVE | 1 | SNA | |
| 3 | JG61-40001A | FOOT-SF4000 | 1 | SA | |
| 4 | 6003-000301 | SCREW-TAPTITE | 3 | SA | |
| 5 | JC39-00661A | HARNESS-FUSER CONTROL | 1 | SNA | |
| 6 | JC61-01203A | BRACKET-P-SWING | 1 | SNA | |
| 7 | JC66-00915A | SHAFT-SWING DEVE | 1 | SNA | |
| 8 | 6031-001255 | WASHER-PLAIN | 2 | SA | |
| 9 | JC66-00871A | GEAR-M-RDCN DEVE | 1 | SNA | |
| 10 | JC66-00857A | GEAR-M-SWING | 1 | SNA | |

5.11 Main Motor

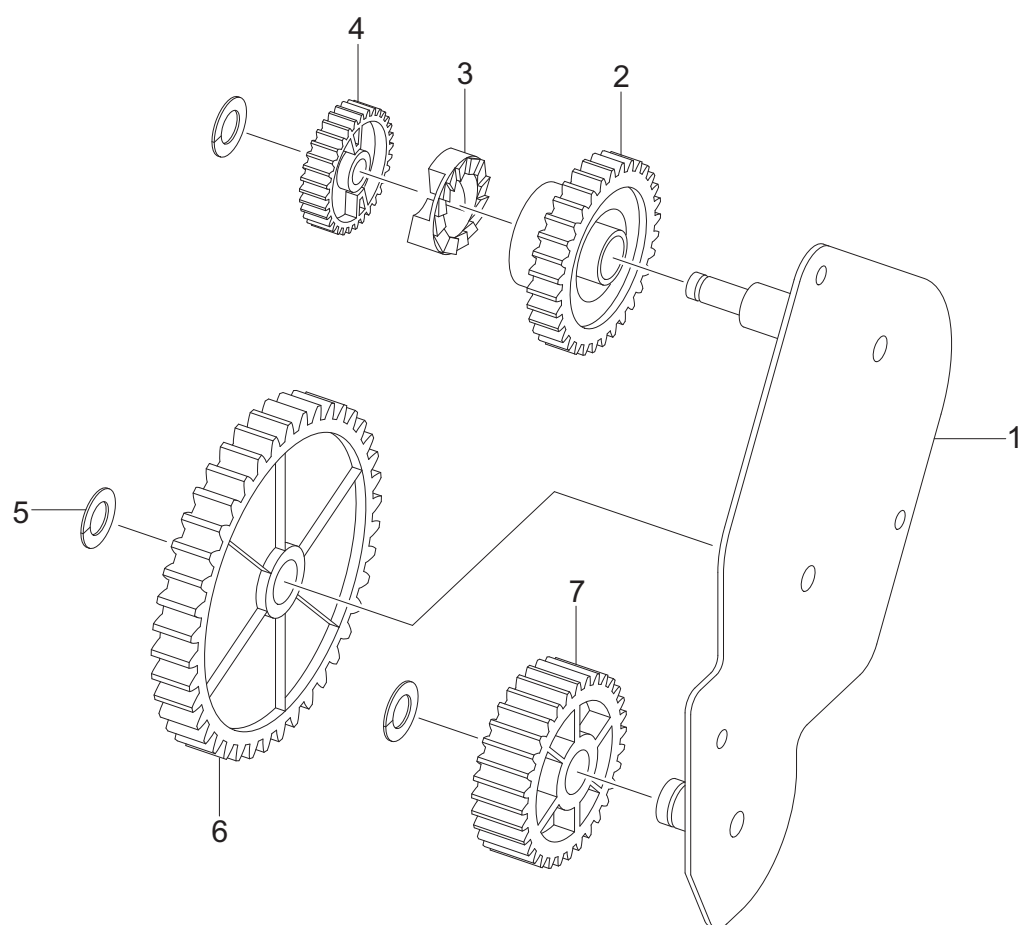
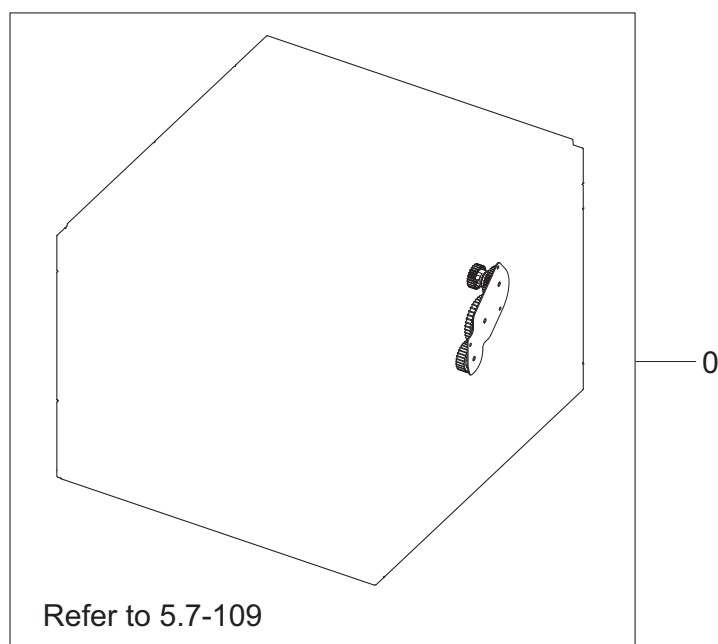


Main Motor Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|----------------------|------|---------|--------|
| 0 | JC96-05104A | ELA-MAIN BLDC | 1 | SA | |
| 1 | JC66-00875A | GEAR-M-FUSER IDLE 1 | 1 | SA | |
| 2 | JC66-00867A | GEAR-M-OPC DRV | 1 | SNA | |
| 3 | JC66-00864A | GEAR-M-REGI DRV | 1 | SNA | |
| 4 | JC66-00865A | GEAR-M-RDCN REGI | 1 | SNA | |
| 5 | JC66-00866A | GEAR-M-RDCN PICK UP | 1 | SNA | |
| 6 | JC66-00863A | GEAR-M-PICK UP DRV | 1 | SNA | |
| 7 | JC66-00862A | GEAR-M-FEED DRV | 1 | SNA | |
| 8 | JC66-00861A | GEAR-M-MP DRV | 1 | SNA | |
| 9 | JC66-00873A | GEAR-M-RDCN MP | 1 | SNA | |
| 10 | JC66-00860A | GEAR-M-RDCN FUSER | 1 | SNA | |
| 11 | JC61-01204A | BRACKET-P-MAIN | 1 | SNA | |
| 12 | JC31-00113A | MOTOR BLDC | 1 | SNA | |
| 13 | 6003-000301 | SCREW-TAPTITE | 4 | SNA | |
| 14 | 6031-001255 | WASHER-PLAIN | 5 | SA | |
| 15 | JC39-00975A | CBF Harness DC MOTOR | 1 | SNA | |

5.12 Idle Gear Unit

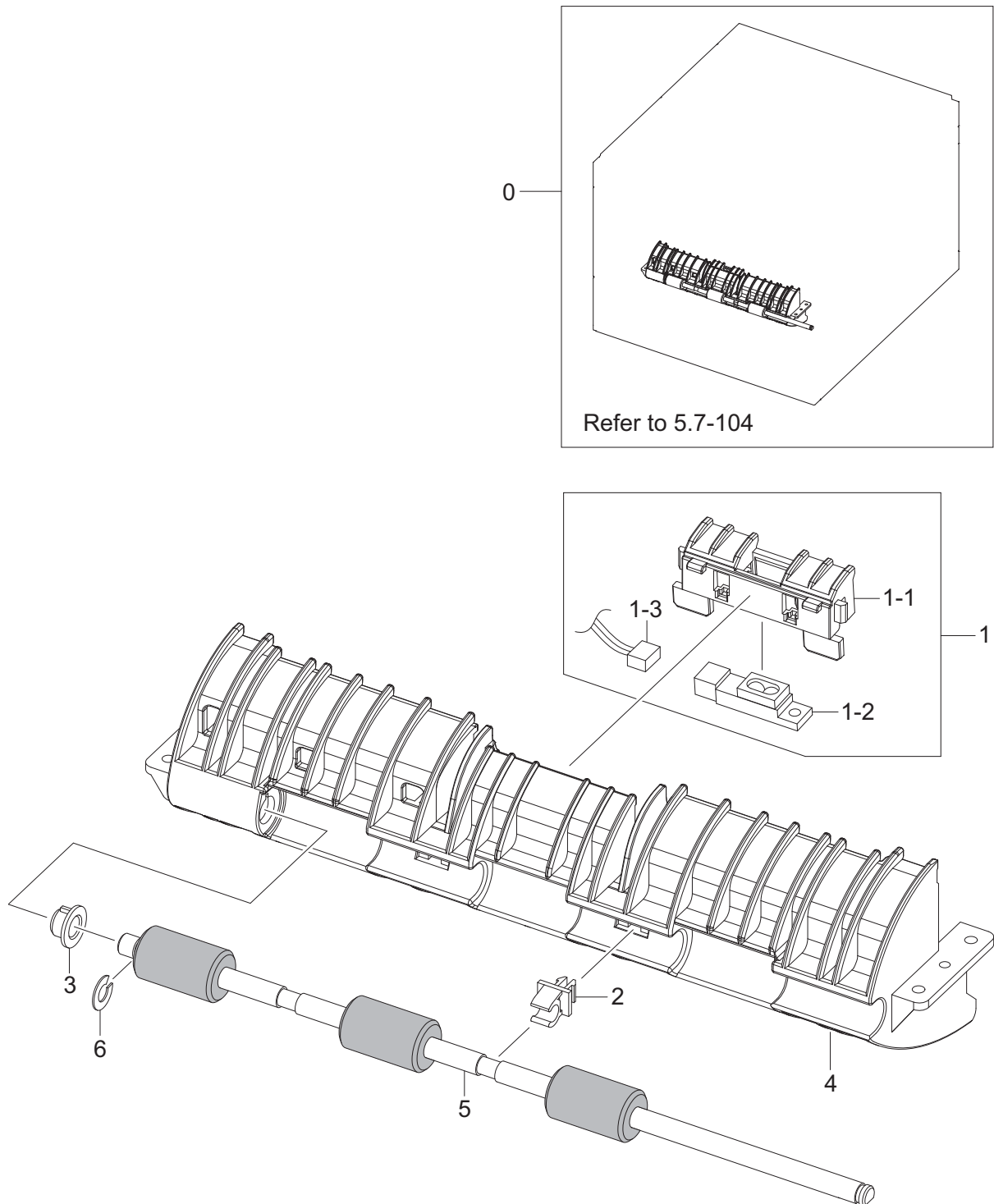


Idle Gear Unit Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|-----------------------|------|---------|--------|
| 0 | JC97-02238A | MEA UNIT-GEAR IDLE | 1 | SA | |
| 1 | JC61-01200A | BRACKET-P-GEAR IDLE | 1 | SNA | |
| 2 | JC66-00858A | GEAR-M-FUSER DRV IN | 1 | SNA | |
| 3 | JC66-00868A | CLUTCH-M-HUB | 1 | SNA | |
| 4 | JC66-01155A | GEAR-FUSER RDCN OUT V | 1 | SNA | |
| 5 | 6031-001255 | WASHER-PLAIN | 3 | SA | |
| 6 | JC66-00872A | GEAR-FUSER IDLE 3 | 1 | SNA | |
| 7 | JC66-00859A | GEAR-M-FUSER IDLE 2 | 1 | SNA | |

5.13 Feed Unit

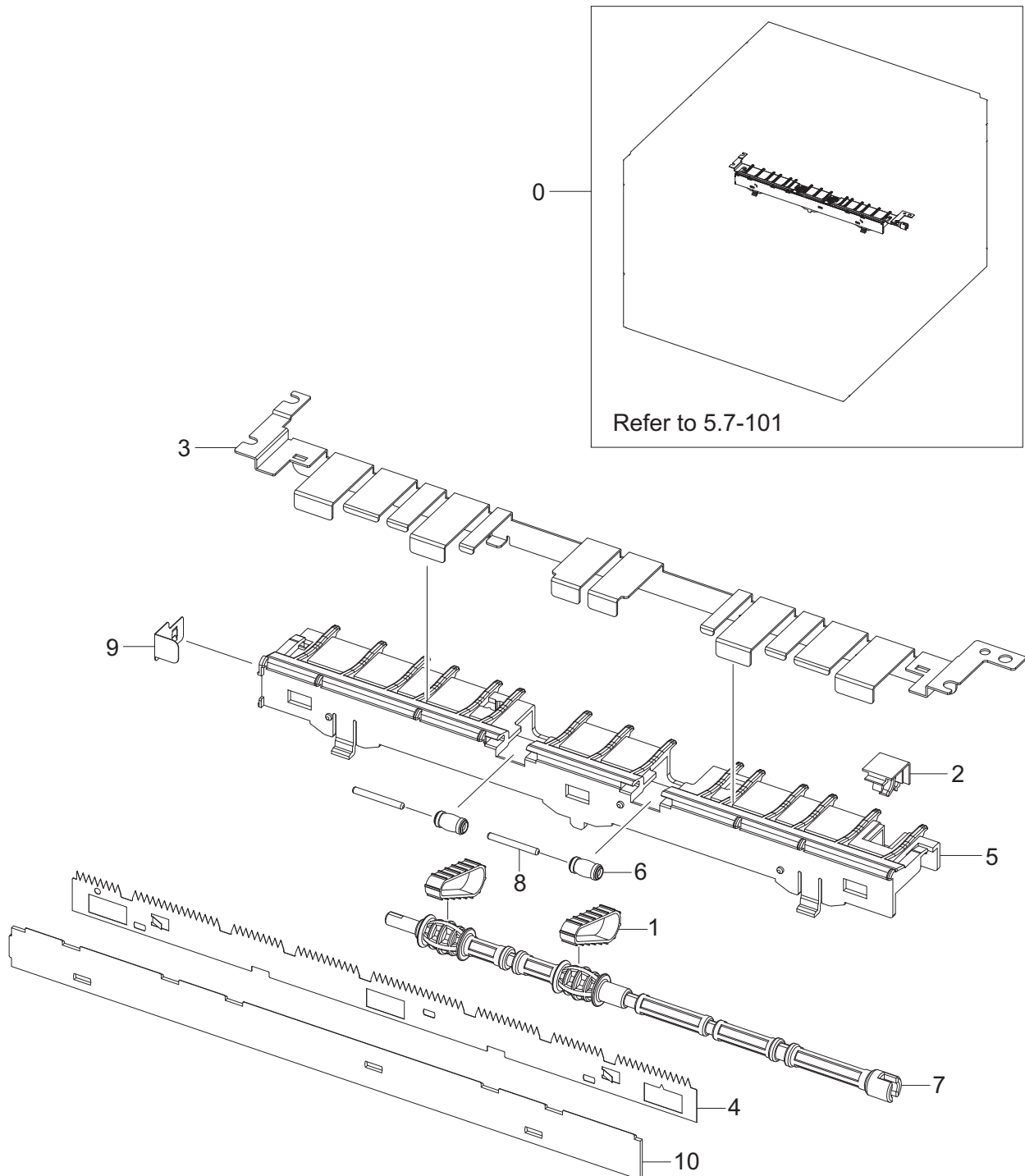


Feed Unit Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|------------------------|------|---------|--------|
| 0 | JC96-04119B | ELA UNIT-FEED | 1 | SA | |
| 1 | JC96-04114B | ELA UNIT-SENSOR_CHARGE | 1 | SNA | |
| 2 | JC72-00382B | PMO-BUSHING FEED | 1 | SA | |
| 3 | JC66-10202A | BEARING-PICK UP | 1 | SA | |
| 4 | JC61-01725A | FRAME-FEED | 1 | SA | |
| 5 | JC66-01267A | ROLLER-SHAFT_FEED | 1 | SA | |
| 6 | JC61-01550A | STOPPER-SPACER | 1 | SNA | |

5.14 Feed Unit 3X5

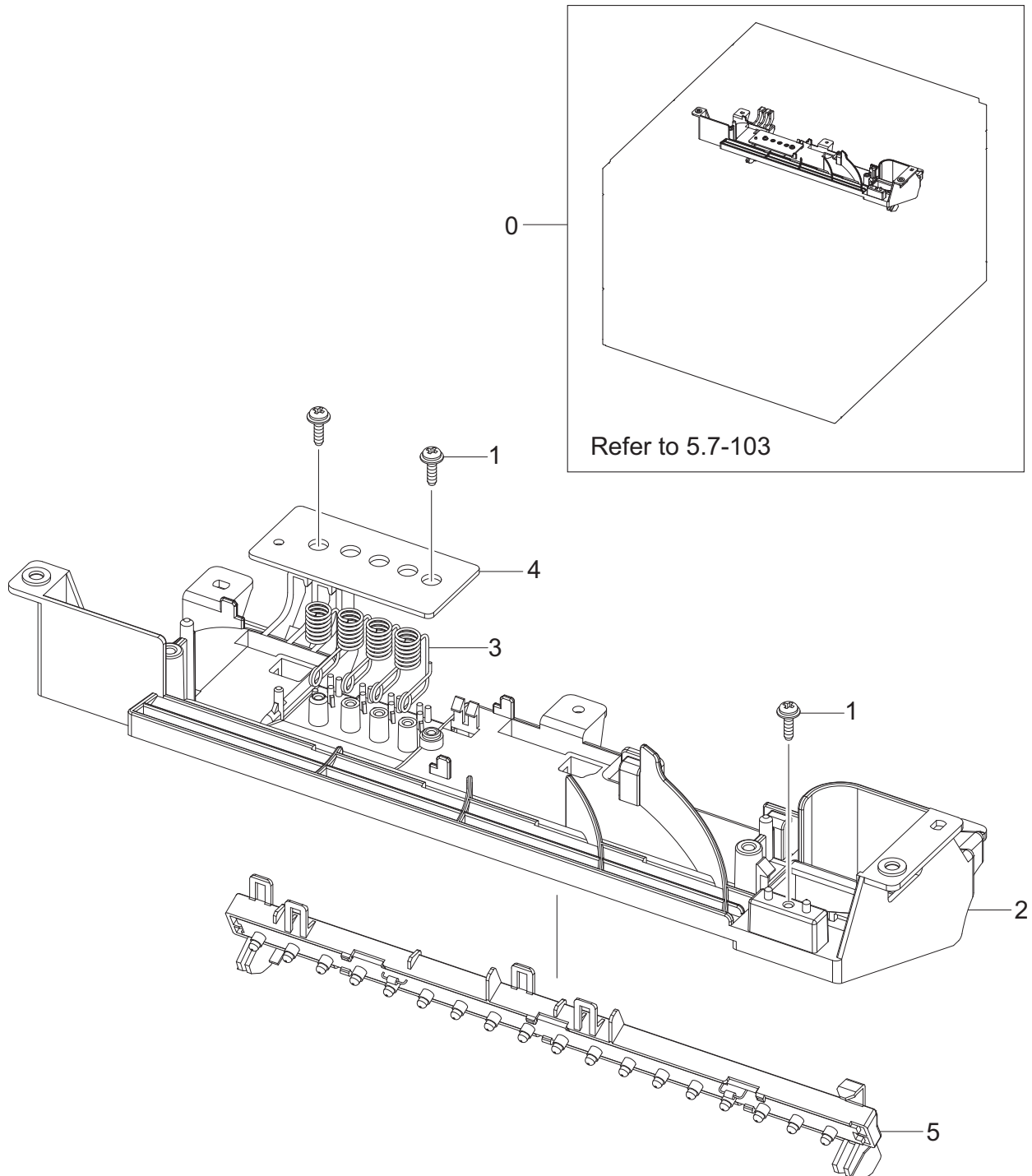


Feed Unit 3X5 Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|----------------------|------|---------|--------|
| 0 | JC96-03425B | ELA UNIT-FEED_3X5 | 1 | SA | |
| 1 | JC73-00206A | RUBBER-BELT_FEED | 2 | SA | |
| 2 | JC61-01239A | GUIDE-M SHAFT_BELT | 1 | SNA | |
| 3 | JC61-02624A | GUIDE-TRANSFER_FRONT | 1 | SNA | |
| 4 | JC61-02703A | PLATE-SAW | 1 | SNA | |
| 5 | JC61-02618A | HOLDER-SAW | 1 | SNA | |
| 6 | JC66-00887A | ROLLER-M IDLE_BELT | 2 | SNA | |
| 7 | JC66-01985A | SHAFT-BELT_3X5 | 1 | SNA | |
| 8 | JC70-20901A | IEX-SHAFT IDLE,F/UP | 2 | SA | |
| 9 | JC65-00038A | TERMINAL-SIDE_SAW | 1 | SNA | |
| 10 | JC63-01940A | COVER-SAW | 1 | SNA | |

5.15 LSU Frame

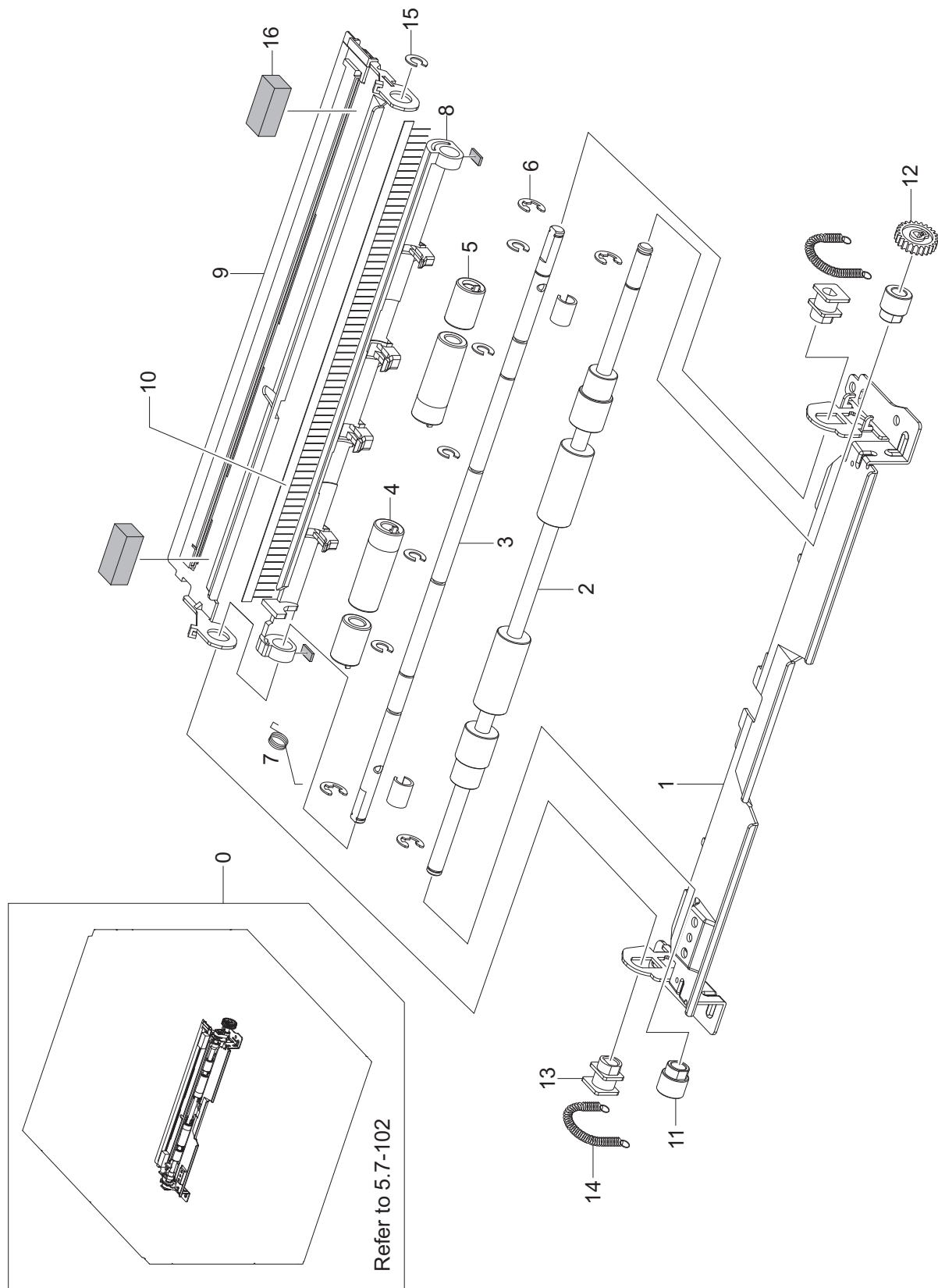


LSU Frame Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|----------------------|------|---------|--------|
| 0 | JC96-03960C | ELA HOU-FRAME_LSU_LO | 1 | SA | |
| 1 | 6003-000196 | SCREW-TAPTITE | 3 | SA | |
| 2 | JC61-01732A | FRAME-PART_UPPER | 1 | SNA | |
| 3 | JC65-00004B | TERMINAL-DEVE | 4 | SNA | |
| 4 | JC92-02091A | PBA SUB-CRUM_IF | 1 | SA | |
| 5 | JC96-04121B | ELA UNIT-DEVE_ERASER | 1 | SNA | |

5.16 REGI

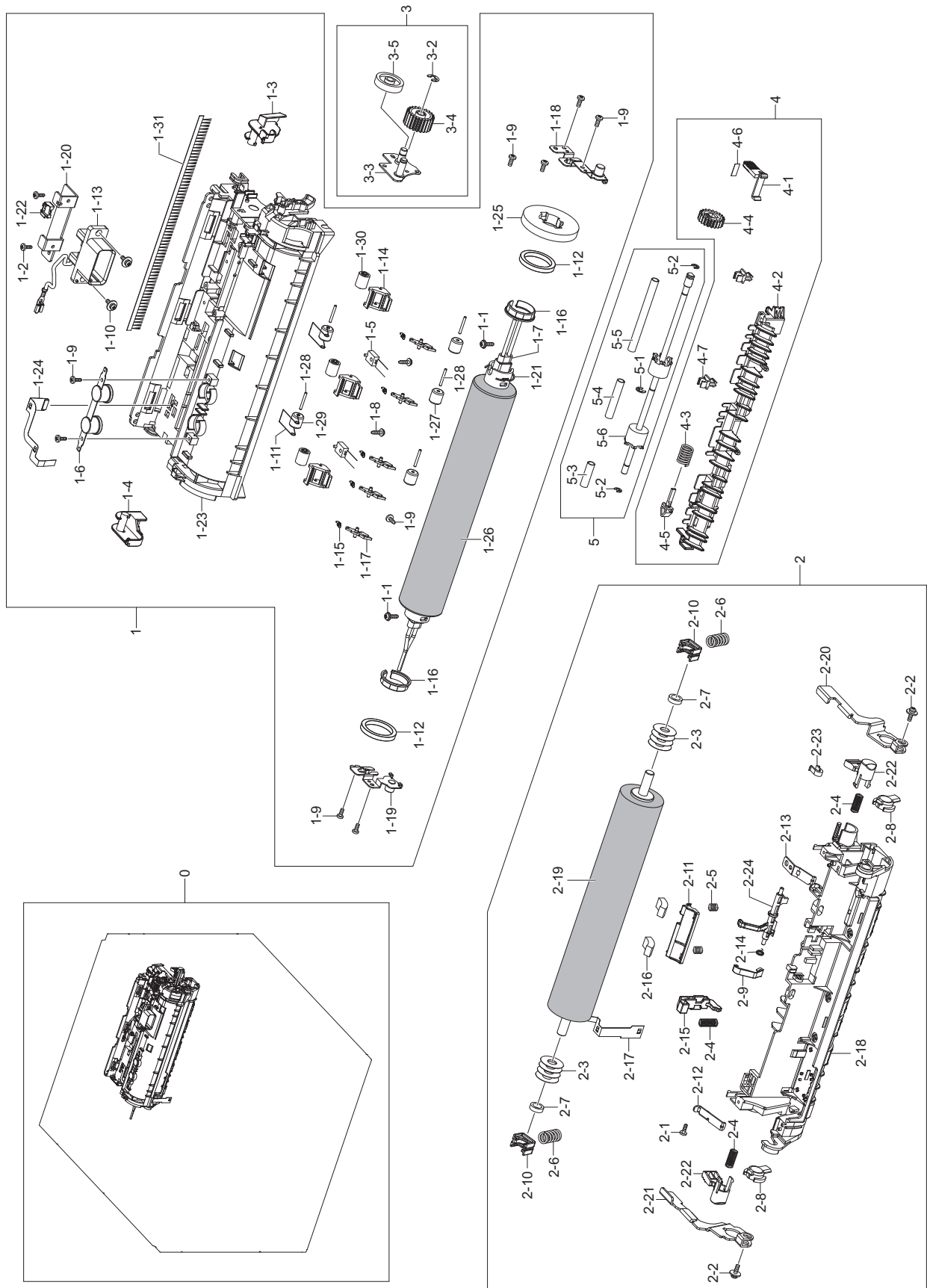


REGI Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|--------------------------|------|---------|--------|
| 0 | JC96-03959B | ELA UNIT-REGI | 1 | SA | |
| 1 | JC61-00674A | GUIDE-P_REGI LOWER | 1 | SA | |
| 2 | JC66-00450A | ROLLER-REGI LOWER L | 1 | SNA | |
| 3 | JC66-00446A | SHAFT-REGI UPPER | 1 | SA | |
| 4 | JC66-00647A | ROLLER-M_REGI IDLE L25 | 2 | SA | |
| 5 | JC66-00648A | ROLLER-M_REGI IDLE S25 | 2 | SA | |
| 6 | 6044-000231 | RING-E | 4 | SA | |
| 7 | 6107-001158 | SPRING-TS | 1 | SA | |
| 8 | JC72-00998A | PMO-ACTUATOR-REGISHUTTER | 1 | SA | |
| 9 | JC61-00670A | GUIDE-P_REGI PLATE | 1 | SA | |
| 10 | JC75-00095A | MEC-BRUSH ANTISTATIC | 1 | SA | |
| 11 | JC61-01576A | HOLDER-P-REGI | 2 | SA | |
| 12 | JC66-00420A | GEAR-REGI Z25 | 1 | SA | |
| 13 | JC61-00669A | BUSH-M-ROLLER REGI U | 2 | SA | |
| 14 | 6107-001155 | SPRING-ES | 2 | SA | |
| 15 | JC61-01550A | STOPPER-SPACER | 6 | SNA | |
| 16 | JC72-01390A | SPONGE-REGI_PLATE | 2 | SA | |

5.17 Fuser Unit



Fuser Unit Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|---------------------------|------|---------|--------|
| 0 | JC96-04854A | ELA UNIT FUSER 2LAMP 110V | 1 | SA | |
| | JC96-04854B | ELA UNIT FUSER 2LAMP 220V | 1 | SA | |
| 1 | JC96-04913A | ELA UNIT-FUSER_UPPER 110V | 1 | SNA | |
| | JC96-04913B | ELA UNIT-FUSER_UPPER 220V | 1 | SNA | |
| 1-1 | 6003-000196 | SCREW-TAPTITE | 2 | SA | |
| 1-2 | 6003-000282 | SCREW-TAPTITE | 2 | SA | |
| 1-3 | JC61-02470A | HOLDER-M-LEVER_L | 1 | SNA | |
| 1-4 | JC61-02479A | HOLDER-M-LEVER_R | 2 | SNA | |
| | JC68-00408B | LABEL(R)-LV FUSER | 1 | SNA | |
| | JC68-01134A | LABEL(P)-BLANK(FUSER) | 1 | SNA | |
| | JC68-01581A | LABEL(P)-CAUTION HOT | 1 | SNA | |
| 1-5 | 1404-001355 | THERMISTOR(DUAL) | 1 | SA | |
| 1-6 | 4712-001029 | THERMOSTAT | 1 | SA | |
| 1-7 | 4713-001233 | LAMP-DUAL-266-110V | 1 | SA | |
| | 4713-001234 | LAMP-DUAL-266-110V | 1 | SA | |
| 1-8 | 6003-000196 | SCREW-TAPTITE | 2 | SA | |
| 1-9 | 6003-000282 | SCREW-TAPTITE | 9 | SNA | |
| 1-10 | 6006-001078 | SCREW-TAPTITE | 2 | SNA | |
| 1-11 | 6107-001159 | SPRING -TS | 2 | SA | |
| 1-12 | 6601-001479 | BEARING-BALL | 2 | SA | |
| 1-13 | JC39-00747A | HARNESS-FUSER-FU | 1 | SA | |
| 1-14 | JC61-00785A | HOLDER-M-IDLE ROLLER | 3 | SA | |
| 1-15 | JC61-01774A | SPRING ETC-SAPERATION | 5 | SA | |
| 1-16 | JC61-01958A | BUSH-HR | 2 | SA | |
| 1-17 | JC61-02302A | GUIDE-CLAW POLY | 5 | SA | |
| 1-18 | JC61-02451A | BRACKET LAMP-RIGHT | 1 | SNA | |
| 1-19 | JC61-02456A | BRACKET LAMP-LEFT | 1 | SNA | |
| 1-20 | JC61-02509A | BRACKET-DRAWER | 1 | SNA | |
| 1-21 | JC61-02551A | SPRING-ETC-LOCK | 1 | SNA | |
| 1-22 | JC61-02657A | HOLDER-THERMISTOR | 1 | SA | |
| 1-23 | JC63-01741A | COVER-FUSER UP LAMP | 1 | SNA | |
| 1-24 | JC63-01761A | GROUND-FUSER_BRUSH | 1 | SNA | |
| 1-25 | JC66-01847A | GEAR-FUSER_2LAMP | 1 | SA | |
| 1-26 | JC66-01882A | ROLLER-HEAT | 1 | SA | |
| 1-27 | JC66-02013A | ROLLER-EXIT F/UP IDLE | 3 | SNA | |
| 1-28 | JC70-20901A | IEX-SHAFT IDLE_F/UP | 5 | SA | |
| 1-29 | JC72-20902A | PEX-ROLLER F/UP(2) | 2 | SA | |
| 1-30 | JC72-40981A | PMO-ROLLER UPPER DP | 3 | SA | |

Fuser Unit Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

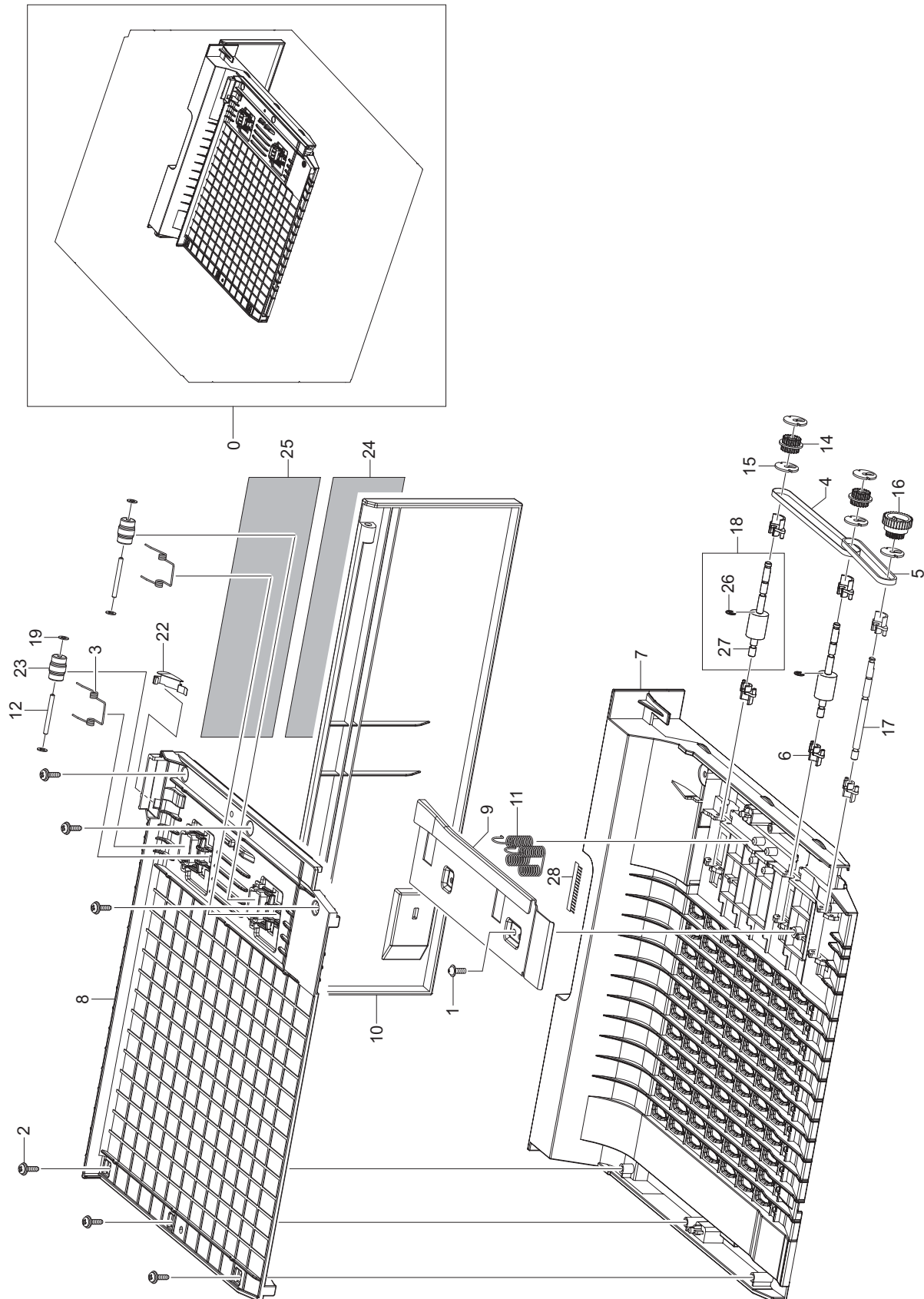
| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|------------------------|------|---------|--------|
| 1-31 | JC75-00095A | MEC-BRUSH ANTISTATIC | 1 | SA | |
| 2 | JC97-03092A | MEA UNIT-FUSER LOWER | 1 | SNA | |
| 2-1 | 6003-000282 | SCREW-TAPTITE | 2 | SNA | |
| 2-2 | 6006-001078 | SCREW-TAPTITE | 2 | SNA | |
| 2-3 | 6031-001533 | WASHER-PLAIN | 8 | SNA | |
| 2-4 | 6107-001172 | SPRING-CS | 3 | SA | |
| 2-5 | 6107-001496 | SPRING-CS | 2 | SNA | |
| 2-6 | 6107-001501 | SPRING-CS | 2 | SNA | |
| 2-7 | 6601-001389 | BEARING-BALL | 2 | SA | |
| 2-8 | JC61-01214A | HOLDER-M-PR SHAFT | 2 | SNA | |
| 2-9 | JC61-01578A | PLATE-P-ACTUATOR COVER | 1 | SNA | |
| 2-10 | JC61-01745A | BUSH-PRESSURE | 2 | SA | |
| 2-11 | JC61-02610A | HOLDER FELT LOWER | 1 | SNA | |
| 2-12 | JC61-02711A | BRACKET-LOWER_LEFT | 1 | SNA | |
| 2-13 | JC61-02712A | BRACKET-LOWER_RIGHT | 1 | SNA | |
| 2-14 | JC61-70903A | SPRING ETC-ACTUATOR | 1 | SA | |
| 2-15 | JC63-00724A | COVER-M-SLIDE SENSOR | 1 | SNA | |
| 2-16 | JC63-00903A | FELT-CLEAN TONER | 2 | SNA | |
| 2-17 | JC63-01744A | GROUND-HR_LAMP | 1 | SNA | |
| 2-18 | JC63-01749A | COVER-FUSER LO LAMP | 1 | SNA | |
| 2-19 | JC66-00931A | ROLLER-PRESSURE | 1 | SA | |
| 2-20 | JC66-01884A | LEVER-P-RELEASE_R | 1 | SNA | |
| 2-21 | JC66-01883A | LEVER-P-RELEASE_L | 1 | SNA | |
| 2-22 | JC67-00102A | CAP-M-FUSER LOCK | 2 | SNA | |
| 2-23 | JC67-00103A | CAP-M-ACTUATOR | 1 | SNA | |
| 2-24 | JC72-01358A | PMO-ACTUATOR EXIT | 1 | SNA | |
| 3 | JC97-03196A | MEA UNIT-FUSER_BK_G | 1 | SNA | |
| 3-1 | 6044-000231 | RING-E | 1 | SA | |
| 3-2 | JC61-02548A | BRACKET-P-FUSER | 1 | SNA | |
| 3-3 | JC66-01925A | GEAR-IDLE 23 FUSER | 1 | SNA | |
| 3-4 | JC66-01154A | GEAR-IDLE 25 FUSER | 2 | SNA | |
| 4 | JC97-03197A | MEA UNIT-FUSER_GU_R | 1 | SNA | |
| 4-1 | JC61-01549A | HOLDER-M REAR_LEVER | 1 | SNA | |
| 4-2 | JC61-02546A | GUIDE-REAR LAMP | 1 | SNA | |
| 4-3 | JC61-70932A | SPRING ETC-GUIDE DEVE | 1 | SA | |
| 4-4 | JC66-00854A | GEAR-M-EXIT DUP Z21 | 1 | SA | |
| 4-5 | JC67-00111A | CAP-M_ACTUATOR_UP | 1 | SNA | |
| 4-6 | JC68-01633A | LABEL(P)-HOLD RE OPEN | 1 | SNA | |
| 4-7 | JC72-00382A | PMO-BUSHING TX | 2 | SNA | |

Fuser Unit Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|--------------------|------|---------|--------|
| 5 | JC97-03216A | MEA UNIT-EXIT F_UP | 1 | SNA | |
| 4-1 | 6044-000125 | RING-E | 1 | SC | |
| 4-2 | 6044-000159 | RING-C | 2 | SA | |
| 4-3 | JC62-00313A | TUBE-SMALL_F_UP | 1 | SNA | |
| 4-4 | JC62-00314A | TUBE-MIDDLE_F_UP | 1 | SNA | |
| 4-5 | JC62-00315A | TUBE-LARGE_F_UP | 1 | SNA | |
| 4-6 | JC66-01967A | ROLLER-EXIT_F/UP | 1 | SNA | |
| 4-5 | JC62-00315A | TUBE-LARGE_F_UP | 1 | SNA | |
| 4-6 | JC66-01967A | ROLLER-EXIT_F/UP | 1 | SNA | |

5.18 Duplex Unit

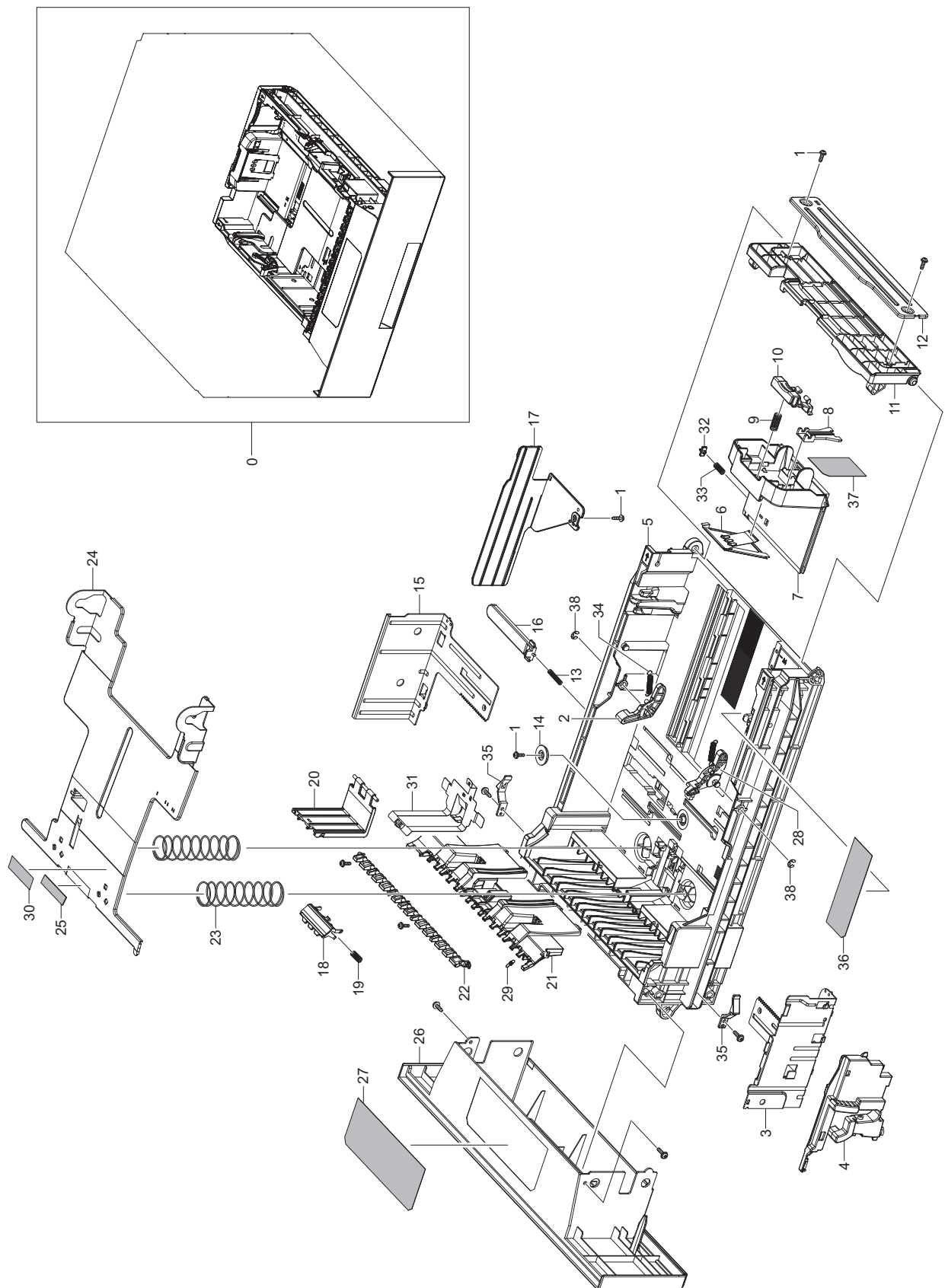


Duplex Unit Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|-----------------------|------|---------|--------|
| 0 | JC96-05126A | ELA UNIT-DUPLEX | 1 | SA | |
| 1 | 6002-000440 | SCREW-TAPPING | 1 | SNA | |
| 2 | 6003-000196 | SCREW-TAPTITE | 6 | SA | |
| 3 | 6107-001156 | SPRING-TS | 2 | SA | |
| 4 | 6602-001084 | BELT-TIMING GEAR | 1 | SA | |
| 5 | 6602-001588 | BELT-TIMING GEAR | 1 | SA | |
| 6 | JC61-00665A | BUSH-M-FEED, DUP | 6 | SA | |
| 7 | JC61-02615A | FRAME-DUPLEX | 1 | SNA | |
| 8 | JC61-02616A | GUIDE-UPPER | 1 | SNA | |
| 9 | JC61-02617A | BRACKET-GUIDE ALIGN | 1 | SNA | |
| 10 | JC63-01942A | COVER-CASSETTE | 1 | SNA | |
| 11 | JC65-00017A | TERMINAL-P-GND DUP | 2 | SA | |
| 12 | JC66-00444A | SHAFT-IDLE ROLL, DUP | 2 | SA | |
| 14 | JC66-00899A | PULLEY-18_DUP | 2 | SA | |
| 15 | JC66-00900A | PULLEY-M-18-DUMMY_DUP | 5 | SA | |
| 16 | JC66-01971A | GEAR-DUPLEX | 1 | SNA | |
| 17 | JC66-01977A | SHAFT-DUPLEX DRIVE | 1 | SNA | |
| 18 | JC96-04983A | ELA UNIT-ROLLER_DUP | 2 | SA | |
| 19 | JK72-00058A | PCT-SILP WASHER | 4 | SNA | |
| 22 | JC61-02620A | GUIDE-ALIGN SIDE | 1 | SNA | |
| 23 | JC66-02093A | ROLLER-IDLE DUPLEX | 2 | SNA | |
| 24 | JC68-02222A | LABEL-PTT | 1 | SNA | |
| 25 | JC68-02223A | LABEL-INFORMATION | 1 | SNA | |
| 26 | 6044-000107 | RING-C | 1 | SNA | |
| 27 | JC66-00901A | ROLLER-FEED_DUP | 1 | SA | |
| 28 | JC67-00205A | BRUSH-DUPLEX | 2 | SNA | |

5.19 Cassette Unit

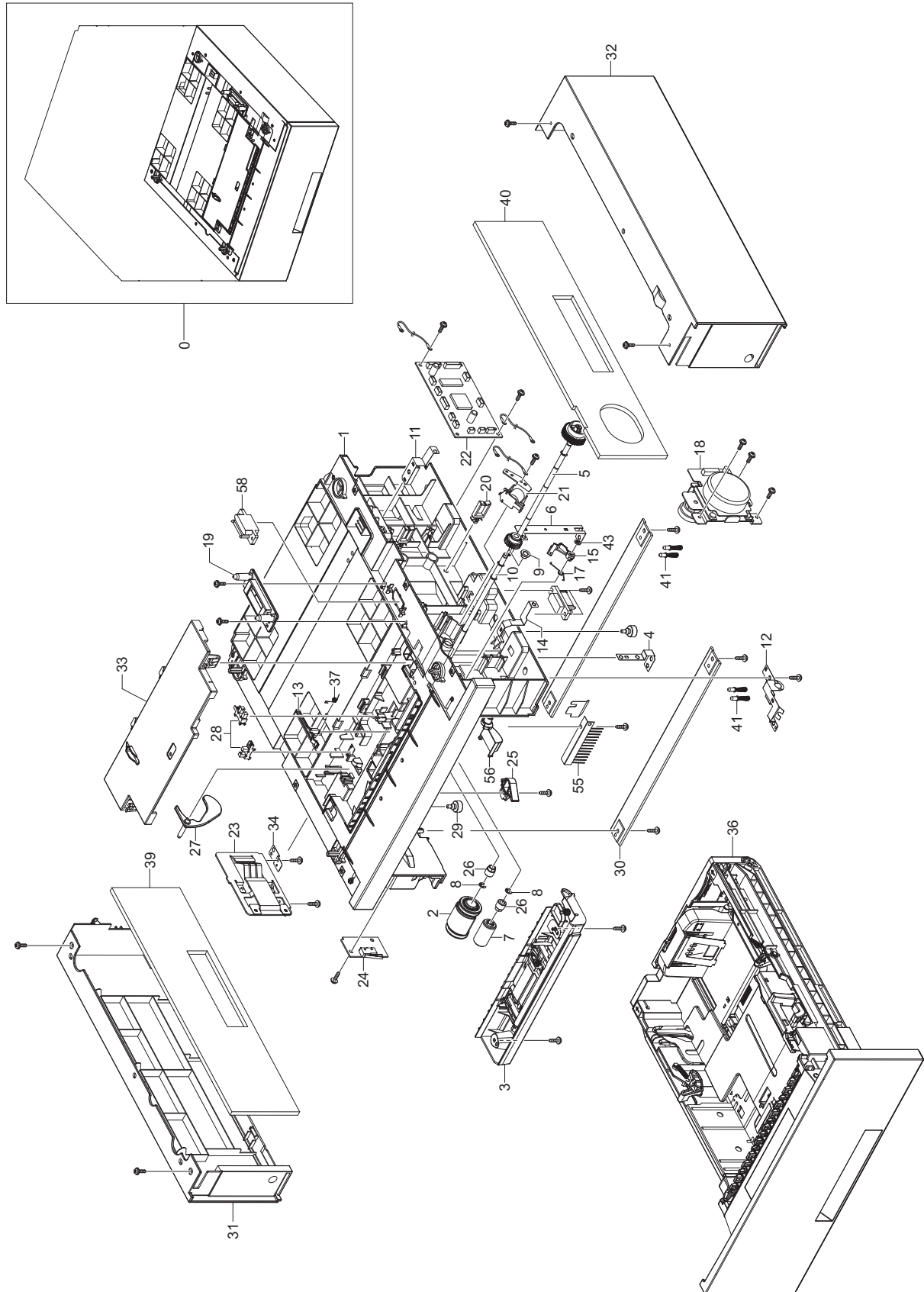


Cassette Unit Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|-------------------------|------|---------|--------|
| 0 | JC96-05151A | ELA UNIT-CASSETTE | 1 | SA | |
| 1 | 6002-000440 | SCREW-TAPPING | 10 | SNA | |
| 2 | JC66-01981A | LINK-DOWN_L | 1 | SA | |
| 3 | JC61-01244A | GUIDE-P-SIDE_R | 1 | SNA | |
| 4 | JC61-01225D | GUIDE-M_SIDE LOCK | 1 | SA | |
| 5 | JC61-02612A | FRAME-CASSETTE | 1 | SA | |
| 6 | JC61-00751A | GUIDE-P-REAR PAPER CST | 1 | SA | |
| 7 | JC61-02649A | GUIDE-REAR_PAPER | 1 | SA | |
| 8 | JC61-02646A | GUIDE-LOCK_REAR | 1 | SA | |
| 9 | JC61-00414A | SPRING ETC-GUIDE PAPER | 1 | SA | |
| 10 | JC64-00190D | KNOB-M_REAR | 1 | SNA | |
| 11 | JC61-02647A | GUIDE-EXTENTION_CST | 1 | SA | |
| 12 | JC61-01223A | BRACKET-P-EXTENTION | 1 | SNA | |
| 13 | JG61-70531A | SPRING ETC-LOCKER,PLATE | 1 | SA | |
| 14 | JG66-40003A | GEAR-PINION | 1 | SA | |
| 15 | JC61-02765A | GUIDE-SIDE_L | 1 | SA | |
| 16 | JC72-41210A | PMO-LOCKER PLATE | 1 | SA | |
| 17 | JC61-02750A | GUIDE-M-PAPER SIZE | 1 | SNA | |
| 18 | JC97-03267A | MEA UNIT-HOLDER PAD | 1 | SA | |
| 19 | JC61-70911A | SPRING ETC-EXIT ROLL FD | 1 | SA | |
| 20 | JC61-01228A | HOLDER-M-PAD_HOUSING | 1 | SNA | |
| 21 | JC61-01724B | GUIDE-PAPER | 1 | SNA | |
| 22 | JC64-00268B | SHUTTER-PATH_CST | 1 | SNA | |
| 23 | JC61-00455A | SPRING ETC-PLATE K/UP | 2 | SA | |
| 24 | JC61-02766A | PLATE-P-KNOCK UP | 1 | SA | |
| 25 | JC73-00141A | RPR-PAD CASSETTE | 1 | SA | |
| 26 | JC64-00418A | HANDLE-CASSETTE | 1 | SA | |
| 27 | JC68-01552A | LABEL(R)-CASSETTE | 1 | SNA | |
| 28 | JC66-01841A | LINK-DOWN_R | 1 | SNA | |
| 29 | JC61-00064A | SPRING ETC-CLAW | 1 | SA | |
| 30 | JF68-10532B | LABEL(P)-BAR CODE | 1 | SNA | |
| 31 | JC63-01206A | GROUND-CASSETTE | 1 | SA | |
| 32 | JC64-00426A | KNOB-GUIDE_REAR | 1 | SA | |
| 33 | JC61-00013A | SPRING ETC-PAD | 1 | SNA | |
| 34 | JC61-70913A | SPRING ETC-KNOCK UP MP | 2 | SA | |
| 35 | JC72-00983A | PMO-LOCKER CST | 2 | SA | |
| 36 | JC68-02159A | LABEL-FUNCTION | 1 | SNA | |
| 37 | JC68-02160A | LABEL-FUNCTION | 1 | SNA | |
| 38 | 6044-000125 | RING-E | 2 | SC | |

5.20 SCF Unit



SCF Unit Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

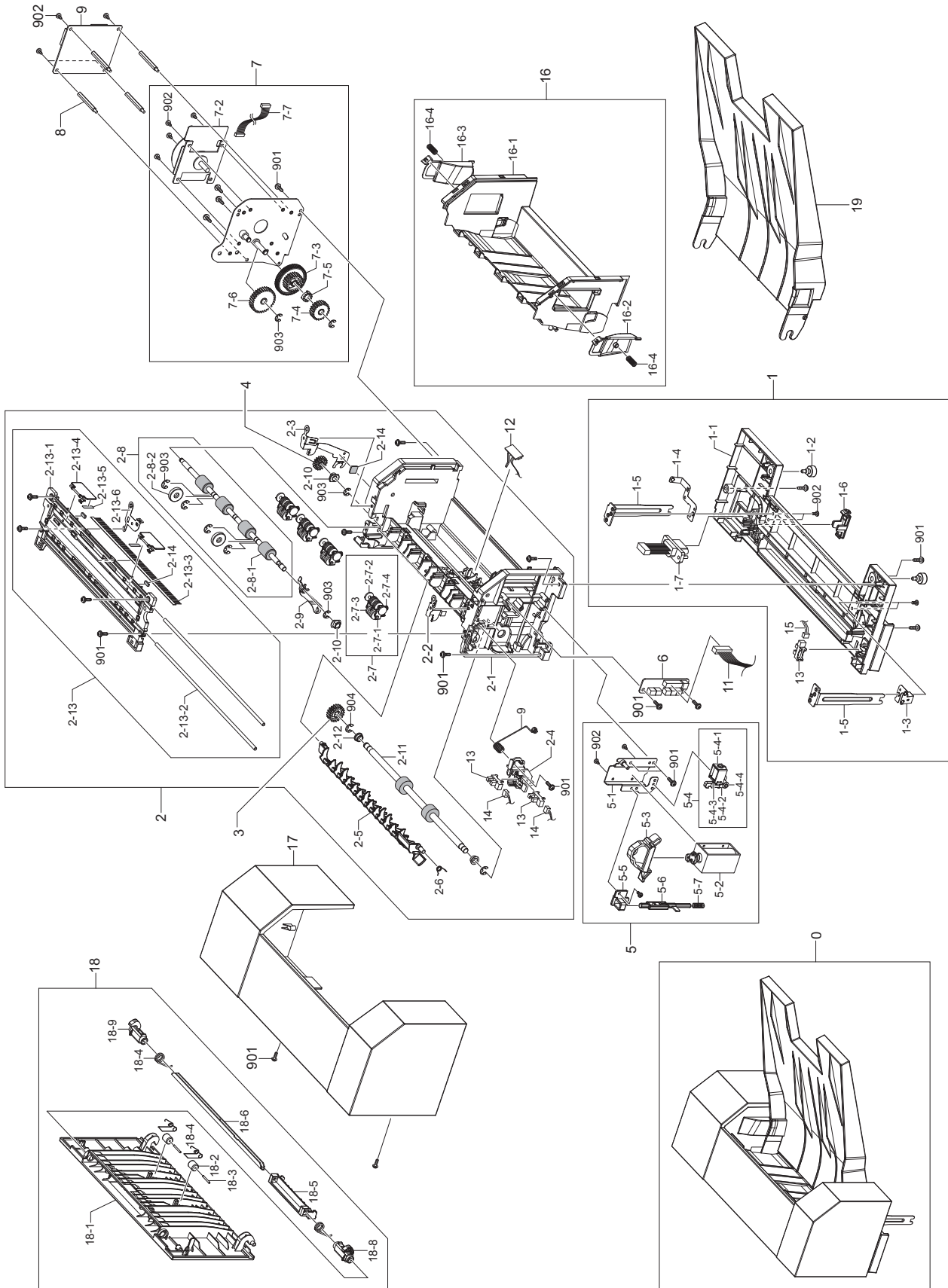
| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|---------------------------|------|---------|--------|
| 0 | JC96-05159A | ELA UNIT-SCF | 1 | SNA | |
| 1 | JC61-01247D | FRAME-M_SCF | 1 | SA | |
| 2 | JC97-02233A | MEA UNIT-P/U_HOUSING | 1 | SA | |
| 3 | JC96-05161A | ELA UNIT-RETARD_SCF | 1 | SA | |
| 4 | JC63-01136A | GROUND-FRONT_BOTTOM | 1 | SNA | |
| 5 | JC66-01277A | SHAFT-PICK UP_SCF | 1 | SA | |
| 6 | JC63-01140A | GROUND-P-REAR_BOTTOM | 1 | SNA | |
| 7 | JC81-03458A | AS-UNIT_FEED1 | 1 | SA | |
| 8 | 6044-000125 | RING-E | 7 | SC | |
| 9 | JC66-10202A | BEARING-PICK UP | 2 | SA | |
| 10 | JC66-01990A | SHAFT-FEED_SCF | 1 | SA | |
| 11 | JC63-01138A | GROUND-REAR_TOP | 1 | SNA | |
| 12 | JC63-01141A | GROUND-P-SHAFT | 1 | SNA | |
| 13 | JC66-01275A | ACTUATOR-FEED | 1 | SA | |
| 14 | JC63-01137A | GROUND-P-MOTOR_SCF | 1 | SNA | |
| 15 | JC61-01743A | HOLDER-M-PICK_UP_SCF | 1 | SNA | |
| 16 | JC97-03228A | MEA-GEAR PICK UP | 1 | SA | |
| 17 | 6107-001170 | SPRING-TS | 1 | SA | |
| 18 | JC96-05106A | ELA-SCF BLDC | 1 | SA | |
| 19 | JC61-01742A | HOLDER-CONNECTOR_SCF | 1 | SA | |
| 20 | 6502-001093 | CABLE CLAMP | 2 | SA | |
| 21 | JC33-00012A | SOLENOID-MAIN | 1 | SNA | |
| 22 | JC92-02094A | PBA SUB-SCF | 1 | SA | |
| 23 | JC96-02127B | ELA HOU-CST SENSOR HAWK16 | 1 | SA | |
| 24 | JC92-02093A | PBA SUB-SCF_COVER | 1 | SA | |
| 25 | JC72-01355A | PMO-REMOVE_LOCK_CST | 1 | SA | |
| 26 | JC61-01579A | HOLDER-P-REGI | 2 | SNA | |
| 27 | JC72-00992A | PMO-ACTUATOR EMPTY,SCF | 1 | SA | |
| 28 | 0604-001095 | PHOTO-INTERRUPTER | 1 | SA | |
| 29 | JC61-40001A | FOOT-ML80 | 2 | SA | |
| 30 | JC71-00042A | BAR-P_CROSS BOTTOM | 2 | SA | |
| 31 | JC63-01944A | COVER-LEFT_SCF | 1 | SA | |
| 32 | JC63-01943A | COVER-RIGHT_SCF | 1 | SA | |
| 33 | JC63-00686C | COVER-M-DUMMY_SCF | 1 | SA | |
| 34 | JC63-00675A | GROUND-P-PAPER_SIZE | 1 | SNA | |
| 35 | JC72-01362A | PMO- M CAM_PICK_UP | 1 | SNA | |
| 36 | JC96-05160A | ELA UNIT-CASSETTE_SCF | 1 | SA | |
| 37 | 6107-001261 | SPRING-TS | 1 | SA | |
| 38 | 6003-000196 | SCREW-TAPTITE | 27 | SA | |

SCF Unit Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|-----------------------|------|---------|--------|
| 39 | JC72-01369A | SPONGE-COVER_L | 1 | SNA | |
| 40 | JC72-01370A | SPONGE-COVER_R | 1 | SNA | |
| 41 | JC97-01401A | MEA UNIT-TERMINAL_TR | 4 | SA | |
| 42 | JC97-03270A | MEA-GEAR ONEWAY | 1 | SA | |
| 43 | 6044-000001 | RING-CS | 1 | SNA | |
| 44 | JC63-01163A | SHEET-GUIDE_PATH | 1 | SA | |
| 45 | JC39-00990A | CBF HARNESS-S_P_SIZE | 1 | SNA | |
| 46 | JB39-40532A | CBF HARNESS-OPE | 2 | SA | |
| 47 | JC39-00989A | CBF HARNESS-S_EMPTY | 1 | SNA | |
| 49 | JC39-00973A | CBF HARNESS-SCF | 2 | SNA | |
| 50 | JC39-00975B | CBF HARNESS-MOTOR | 1 | SA | |
| 51 | JC68-02164E | MANUAL-INSTALL | 1 | SNA | |
| 55 | JC67-00204A | BRUSH-ANTISTATIC_PICK | 1 | SA | |
| 56 | JC66-01982A | LINK-DOWN_R | 1 | SA | |
| 58 | | | | | |

5.21 Expander



Expander Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|-------------------------|------|---------|--------|
| 0 | MAS-0001A | UNIT-EXPANDER | 1 | SA | |
| 1 | " | MAS-FRME-BOTTOM_EXP | 1 | SA | |
| 1-1 | MMO-10003A | FRAME-BOTTOM-EXP | 1 | SNA | |
| 1-2 | JC61-40001A | FPPT ML80 | 2 | SNA | |
| 1-3 | MPR-10004A | GROUND-SOLENOID | 1 | SNA | |
| 1-4 | MPR-10005A | GROUND-MOTOR | 1 | SNA | |
| 1-5 | MPR-10003A | POLE-STACKER | 2 | SNA | |
| 1-6 | MMO-10012A | CAP GEAR | 1 | SNA | |
| 1-7 | JC81-06335A | AS-CONNECTOR MAIN EXP | 1 | SNA | |
| 2 | " | MAS FRAME MAIN_EXP | 1 | SA | |
| 2-1 | MMO-10001A | FRAME-MAIN-EXP | 1 | SNA | |
| 2-2 | MPR-10006A | GROUND-SHAFT-L | 1 | SNA | |
| 2-3 | MPR-10007A | GROUND-SHAFT-R | 1 | SNA | |
| 2-4 | MMO-10009A | HOLDER-DEFLECTOR | 1 | SNA | |
| 2-5 | JC61-02559A | GUIDE-DEFLECTOR | 1 | SNA | |
| 2-6 | 6107-001500 | SPRING-TS | 1 | SNA | |
| 2-7 | JC97-01034A | MEA RACK-EXIT ROLLER | 4 | SA | |
| 2-7-1 | JC72-41006A | HOLDER EXIT ROLL | 4 | SNA | |
| 2-7-2 | JC72-41007A | ROLLER FD F | 4 | SNA | |
| 2-7-3 | JC72-41008A | ROLLER FD R | 4 | SNA | |
| 2-7-4 | JC61-70911A | SPRING ETC-EXIT ROLL FD | 4 | SNA | |
| 2-8 | " | ASS'Y ROLLER-FEED2 | 1 | SNA | |
| 2-8-1 | MCU-20002A | ROLLER-FEED-2 | 1 | SNA | |
| 2-8-2 | JC81-06328A | AS-ROLL DECURL | 2 | SNA | |
| 2-9 | JC72-01310A | ACTUATOR-BIN FULL | 1 | SA | |
| 2-10 | JC61-00423A | BUSH-6_D | 2 | SNA | |
| 2-11 | MCU-20001A | ROLLER-FEED1 | 1 | SA | |
| 2-12 | JC61-00772A | BUSH-DEV DR | 2 | SNA | |
| 2-13 | MAS-00003A | ASS'Y GUIDE-PATH TOP | 1 | SNA | |
| 2-13-1 | MMO-10002A | GUIDE PATH TOP | 1 | SNA | |
| 2-13-2 | MCU-10003A | SHAFT-SUPPORT TOP | 2 | SNA | |
| 2-13-3 | JC75-00095A | BRUSH ANTISTATIC | 1 | SNA | |
| 2-13-4 | JC66-00902D | LEVER STACKER | 2 | SNA | |
| 2-13-5 | MMO-30001A | FILM-LEVER STACKER | 2 | SNA | |
| 2-13-6 | MPR-10008A | GROUND-TOP | 1 | SNA | |
| 2-14 | MRU-30001A | SPONGE-DAMPER | 1 | SNA | |
| 3 | JC66-00854A | GEAR-M-EXIT DUP Z21 | 1 | SNA | |
| 4 | JC66-00674A | GEAR-M-EXIT Z17 | 1 | SNA | |
| 5 | JC81-06329A | AS-UNIT SOLENOID | 1 | SNA | |

Expander Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

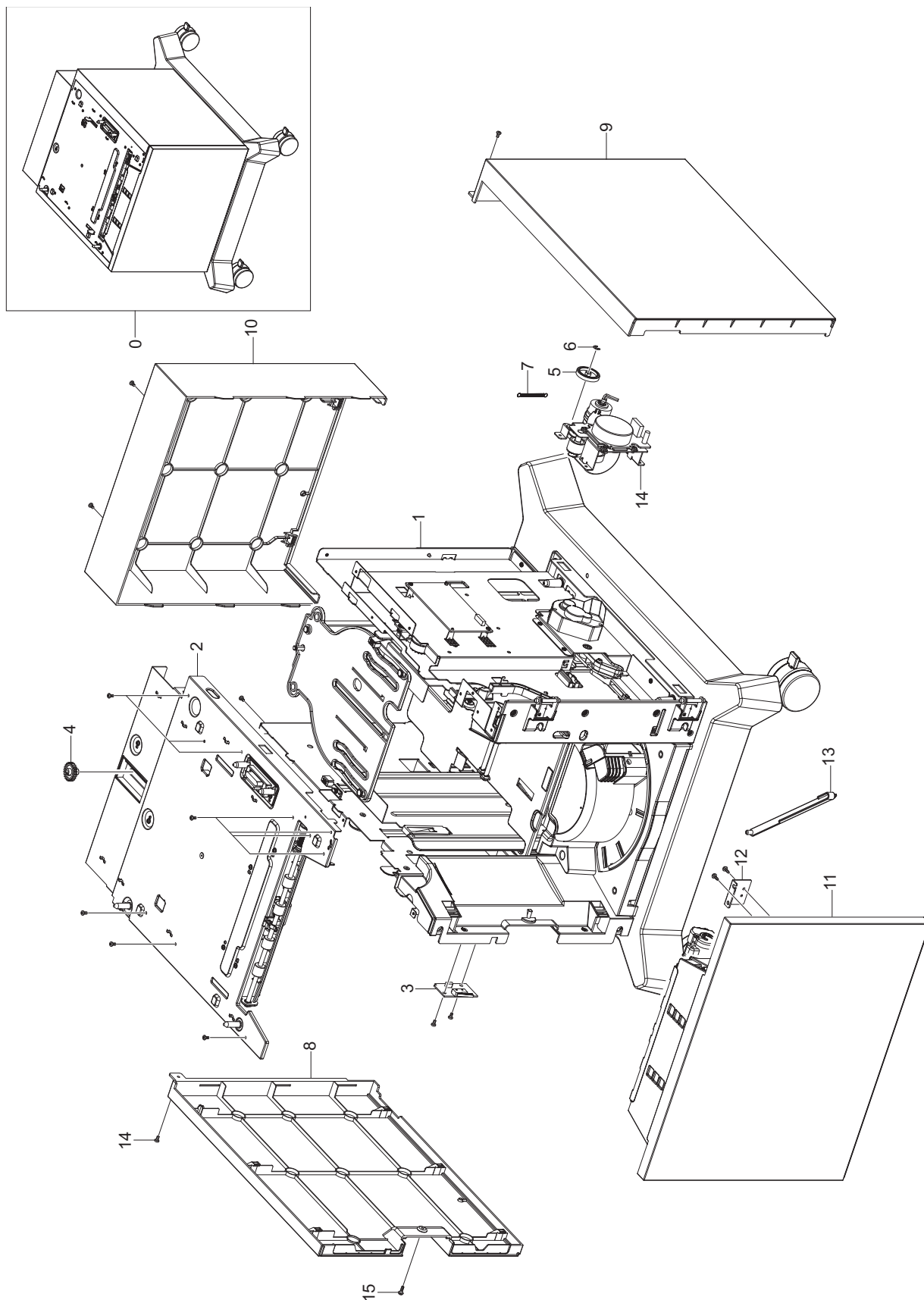
| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|-----------------------|------|---------|--------|
| 5-1 | MAS-10002A | ASS'Y-BRKT SOLENOID | 1 | SNA | |
| 5-2 | JC33-00008A | SOLENOID | 1 | SNA | |
| 5-3 | MMO-10008A | LEVER SOLENOID | 1 | SNA | |
| 5-4 | JC96-04622A | ASSY-SOLENOID PICK-UP | 1 | SNA | |
| 5-4-1 | JC33-00023A | SOLENOID PICK-UP | 1 | SNA | |
| 5-4-2 | JC66-01470A | LEVER PICK-UP | 1 | SNA | |
| 5-4-3 | 6107-001348 | SPRING-CS | 1 | SNA | |
| 5-4-4 | 6031-001602 | WASHER-PLAIN | 1 | SNA | |
| 5-5 | MMO-10010A | HOLDER GUIDE PUSH | 1 | SNA | |
| 5-6 | MMO-10011A | LEVER PUSH DEFLECTOR | 1 | SNA | |
| 5-7 | MSP-20001A | SPRING-CS | 1 | SNA | |
| 6 | JC81-06332A | AS-SUB-BOARD | 1 | SNA | |
| 7 | JC81-06334A | AS-UNIT-MOTOR-EXP | 1 | SNA | |
| 7-1 | MAS-00002A | ASS'Y-BRKT MOTOR-D | 1 | SNA | |
| 7-1-1 | MPR-10001A | BRKT MOTOR | 1 | SNA | |
| 7-1-2 | "" | STUD GEAR 79_23 | 1 | SNA | |
| 7-1-3 | "" | STUD GEAR 33 EXIT | 1 | SNA | |
| 7-2 | JC31-00090A | MOTOR BLDC | 1 | SNA | |
| 7-3 | JC81-06337A | AS-GEAR RDCN 79_23 | 1 | SNA | |
| 7-4 | JC81-06338A | AS-GEAR RDCN 23 | 1 | SNA | |
| 7-5 | JB72-00345A | PICK-UP CLUTCH SUB | 1 | SNA | |
| 7-6 | JC66-00425A | GEAR-IDLE 33 | 1 | SNA | |
| 7-7 | EHA-10002A | HARNESS MOTOR | 1 | SNA | |
| 8 | COM-10001A | BOLT STAND | 4 | SNA | |
| 9 | MSP-40001A | GROUND-SPRING | 1 | SNA | |
| 10 | JC81-06333A | AS-MAIN-BOARD | 1 | SNA | |
| 11 | EHA-10001A | HARNESS MAIN SUB | 1 | SNA | |
| 12 | JC92-01262C | PBA-SUB-FEED SENSOR | 1 | SNA | |
| 13 | 0604-001095 | PHOTO- INTERRUPTER | 3 | SNA | |
| 14 | EHA-10003A | HARNESS BIN-FULL/OPEN | 1 | SNA | |
| 15 | EHA-10004A | HARNESS GATE | 1 | SNA | |
| 16 | MAS-10004A | ASS'Y COVER EXIT | 1 | SNA | |
| 16-1 | MMO-10004A | COVER-EXIT-EXP | 1 | SNA | |
| 16-2 | MMO-10014A | GUIDE PAPER ALINE-L | 1 | SNA | |
| 16-3 | MMO-10015A | GUIDE PAPER ALINE-R | 1 | SNA | |
| 16-4 | MSP-20002A | SPRING-CS, ALINE | 2 | SNA | |
| 17 | MMO-10005A | COVER-MAIN-EXP | 1 | SNA | |
| 18 | JC81-06330A | AS-UNIT-COVER-REAR | 1 | SNA | |
| 18-1 | MMO-10006A | COVER-REAR | 1 | SNA | |

Expander Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|-------------------------|------|---------|--------|
| 18-2 | JC72-20902A | ST-PEX_ROLLER_F_UP | 2 | SNA | |
| 18-3 | JC70-20901A | ST-IEX-SHAFT-IDLE_F_UP | 2 | SNA | |
| 18-4 | 6107-001160 | ST-SPRING-TS | 2 | SNA | |
| 18-5 | JC64-00420A | HANDLE-M_COVER REAR | 1 | SNA | |
| 18-6 | JC61-01404A | BRACKET-P-HANDLE SCF | 1 | SNA | |
| 18-7 | MSP-30001A | SPRING-TS HANDLE | 2 | SNA | |
| 18-8 | JC64-00423A | LEVER-M-REAR LOCK_L | 1 | SNA | |
| 18-9 | JC64-00424A | LEVER-M-REAR LOCK_R | 1 | SNA | |
| 19 | JC81-06331A | AS-STACKER-EXP | 1 | SNA | |
| 901 | 6003-000196 | SCREW-TAPTITE | 20 | SNA | |
| 902 | 6003-00269 | SCREW-TAPTITE (M3X6)... | 15 | SNA | |
| 903 | "" | E-RING, 5PI | 8 | SNA | |
| 904 | "" | E-RING, 6PI | 2 | SNA | |
| 905 | "" | E-RING, 4PI | 0 | SNA | |

5.22 Main HCF

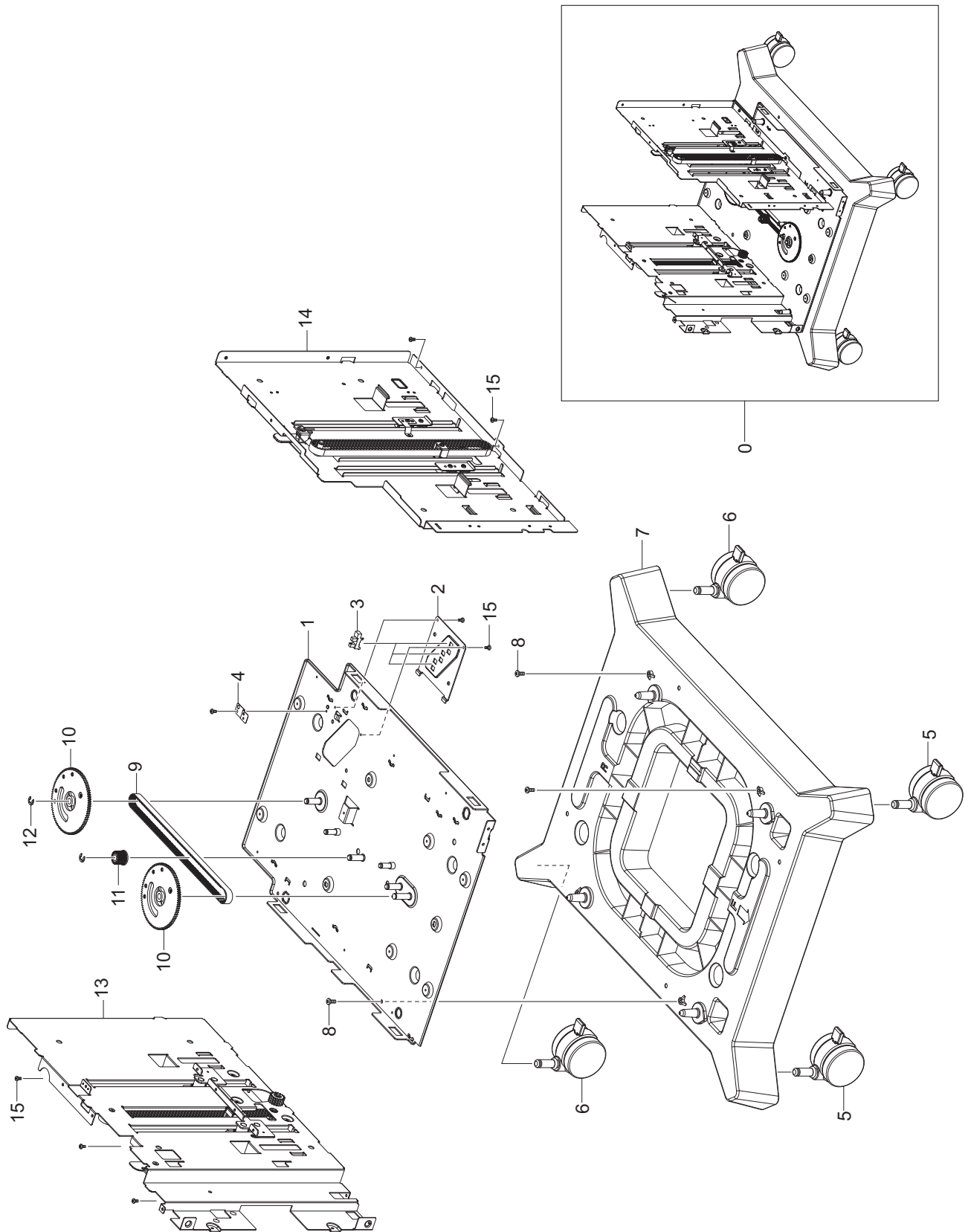


Main_HCF Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|-----------------------|------|---------|--------|
| 0 | JC96-05232A | ELA HOU-L-HCF | 1 | SNA | |
| 1 | | SUB PLATE-BOTTOM_HCF | 1 | SNA | |
| 2 | | ELA HOU-UPPER_HCF | 1 | SNA | |
| 3 | JC92-01686A | PBA SUB-SCF_COVEROPEN | 1 | SNA | |
| 4 | | GEAR-GUIDE REAR | 1 | SNA | |
| 5 | JC66-00974A | GEAR-M_FORWARD | 1 | SNA | |
| 6 | 6044-000125 | RING-E(ID4) | 1 | SC | |
| 7 | 6107-001259 | SPRING-ES | 1 | SNA | |
| 8 | | COVER-SIDE L | 1 | SNA | |
| 9 | | COVER-SIDE R | 1 | SNA | |
| 10 | | COVER-REAR | 1 | SNA | |
| 11 | | MEA UNIT-DOOR FRONT | 1 | SNA | |
| 12 | | BRKT-HINGE | 1 | SNA | |
| 13 | | LINK-DOOR OPEN | 1 | SNA | |
| 14 | | ELA HOU-HCF DRIVE | 1 | SNA | |
| 15 | 6003-000269 | SCREW-TAPTITE (M3X6) | 16 | SA | |
| 16 | 6002-000440 | SCREW-TAPTITE (M3X8) | 5 | SNA | |

5.23 HOU-L HCF1

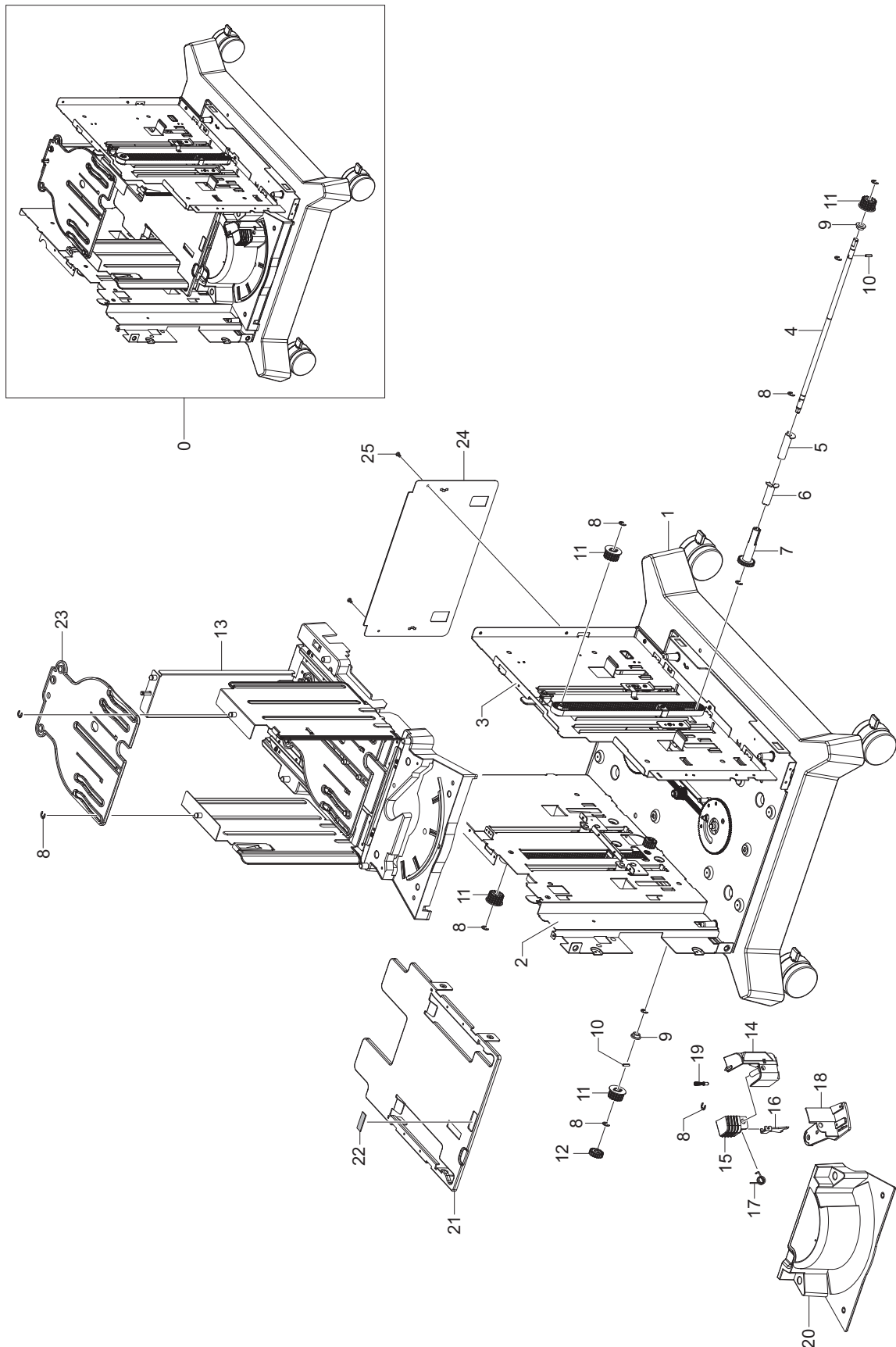


HOU-L_HCF1 Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|-----------------------|------|---------|--------|
| 0 | | ELA HOU-L-HCF(1) | 1 | SNA | |
| 1 | | PLATE-BOTTOM | 1 | SNA | |
| 2 | | BRKT-HOLDER SENSOR | 1 | SNA | |
| 3 | 0604-001095 | PHOTO-INTERRUPTER | 3 | SA | |
| 4 | JC63-00675A | GROUND-P-PAPER_SIZE | 1 | SNA | |
| 5 | | CASTER-M01030 | 2 | SNA | |
| 6 | | CASTER-M01030 | 2 | SNA | |
| 7 | | STABILITY-STAND_DELL | 1 | SNA | |
| 8 | 6001-000357 | SCREW-TAPPING (M4X10) | 4 | SNA | |
| 9 | JC81-06072A | TIMING BELT_S3M | 1 | SNA | |
| 10 | | GEAR-PULLEY_FRONT | 2 | SNA | |
| 11 | | PULLEY-UPPER BELT | 1 | SNA | |
| 12 | 6044-000129 | RING-E (ID6) | 2 | SNA | |
| 13 | | SUB-LIFT LEFT | 1 | SNA | |
| 14 | | SUB-LIFT RIGHT | 1 | SNA | |
| 15 | 6003-000269 | SCREW-TAPTITE (M3X6) | 8 | SA | |

5.24 HOU-L HCF2

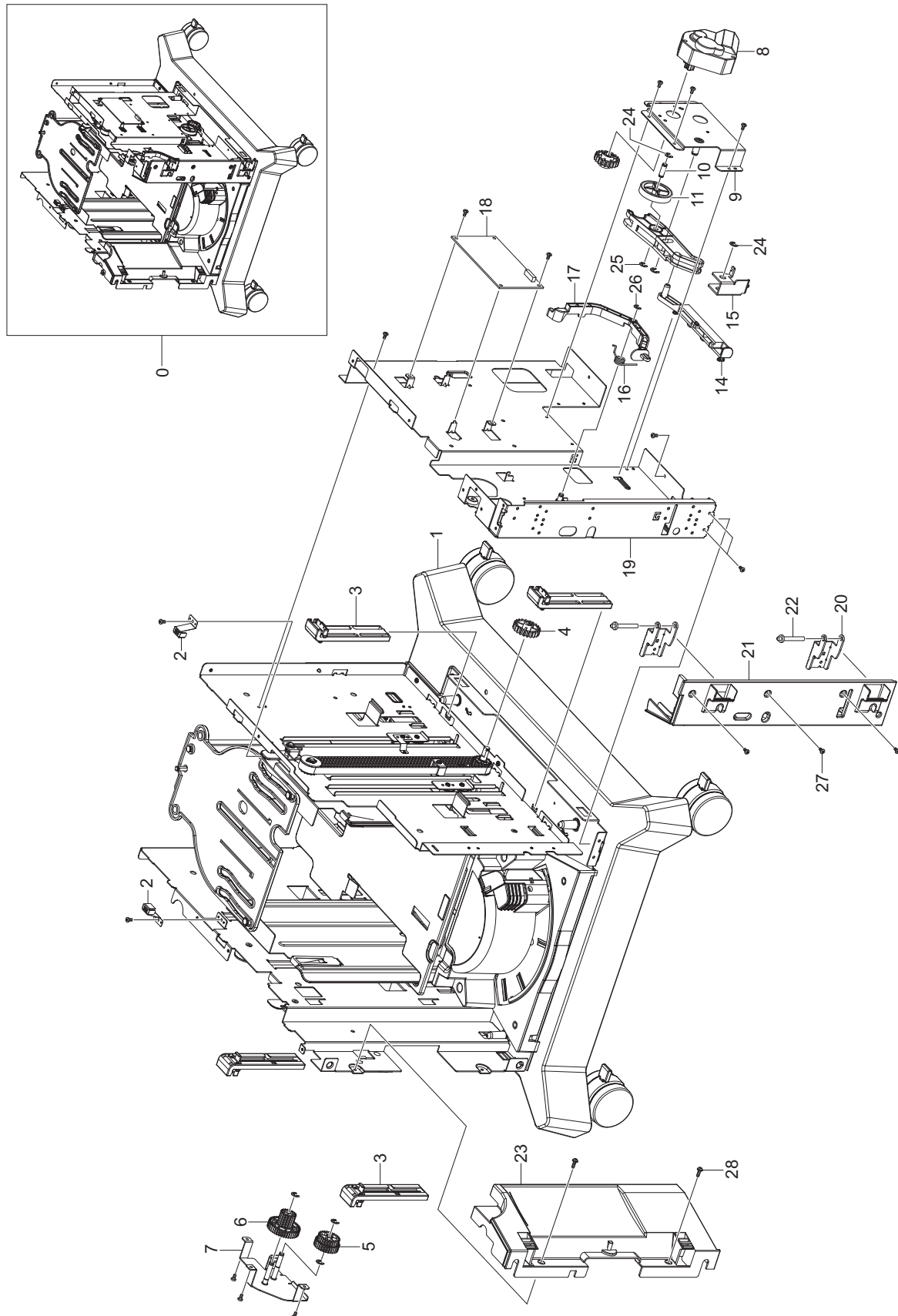


HOU-L_HCF2 Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|---------------------------|------|---------|--------|
| 0 | | ELA HOU-L-HCF(2) | 1 | SNA | |
| 1 | | SUB PLATE-BOTTOM_HCF | 1 | SNA | |
| 2 | | SUB-LIFT LEFT | 1 | SNA | |
| 3 | | SUB-LIFT RIGHT | 1 | SNA | |
| 4 | | SHAFT-PLATE LEVER | 1 | SNA | |
| 5 | | ACTUATOR-PAPER CAPACITY_A | 1 | SNA | |
| 6 | | ACTUATOR-PAPER CAPACITY_B | 1 | SNA | |
| 7 | | GEAR-SHAFT_PC | 1 | SNA | |
| 8 | 6044-000129 | RING-E (ID6) | 11 | SNA | |
| 9 | JC61-00426A | BUSH-8/5 | 2 | SNA | |
| 10 | | SPRING-PIN PULLEY | 2 | SNA | |
| 11 | | PULLEY-LOWER BELT | 4 | SNA | |
| 12 | JC66-00854A | GEAR-EXIT DUP Z21 | 1 | SA | |
| 13 | TBD | ELA UNIT-CASSETTE_HCF | 1 | SNA | |
| 14 | | GUIDE-HANDLE | 1 | SNA | |
| 15 | | KNOB-FRONT | 1 | SNA | |
| 16 | JC61-00267A | GUIDE-M_LOCK A | 1 | SNA | |
| 17 | | SPRING-TS_NV | 1 | SNA | |
| 18 | | HOLDER-GUIDE HANDLE | 1 | SNA | |
| 19 | JC97-01401A | MEA UNIT-TERMINAL:TR | 1 | SA | |
| 20 | | COVER-INNER FRONT | 1 | SNA | |
| 21 | | PLATE-KNOCK UP | 1 | SNA | |
| 22 | JC69-00494A | RPR PAD MP PLUS | 1 | SNA | |
| 23 | | GUIDE-SIDE RAIL | 1 | SNA | |
| 24 | | PLATE-REAR | 1 | SNA | |
| 25 | 6003-000269 | SCREW-TAPTITE M3, L6 | 2 | SA | |

5.25 HOU-L HCF3

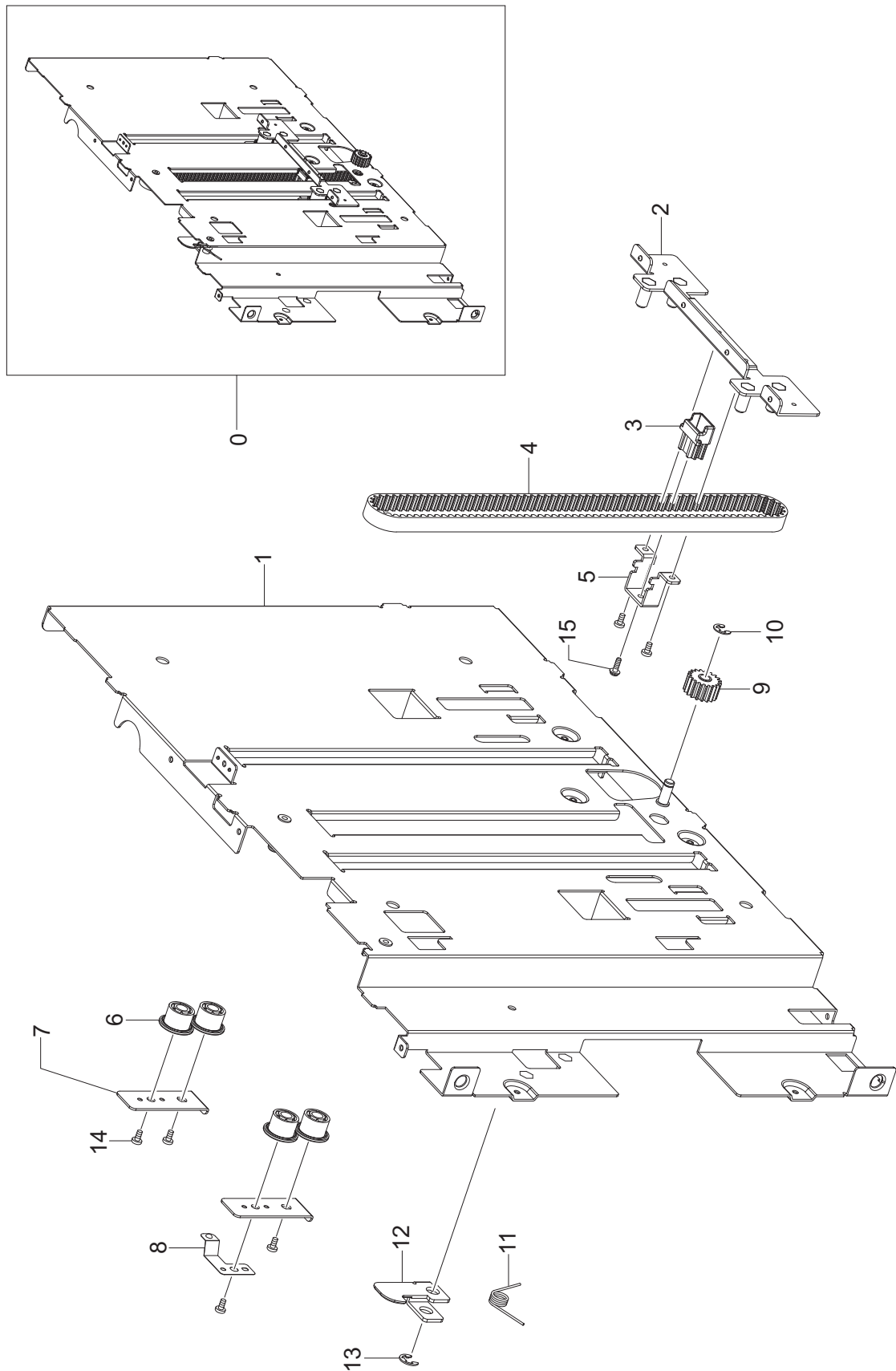


HOU-L_HCF3 Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|----------------------|------|---------|--------|
| 0 | | ELA HOU-L-HCF(3) | 1 | SNA | |
| 1 | | SUB PLATE-BOTTOM_HCF | 1 | SNA | |
| 2 | JC70-11028A | IPR-GROUND-TOP | 2 | SNA | |
| 3 | | AS-UNIT SPRING ROLL | 4 | SNA | |
| 4 | | GEAR-LIFT | 1 | SNA | |
| 5 | JC66-00856A | GEAR-M-RDCN EXIT | 1 | SNA | |
| 6 | | GEAR-REDUCTION_PC | 1 | SNA | |
| 7 | | BRKT-GEAR-REDUCTION | 1 | SNA | |
| 8 | JC31-00109A | AS-MOTOR GEARED | 1 | SNA | |
| 9 | | BRKT-MOTOR | 1 | SNA | |
| 10 | | SHAFT-GEARED | 1 | SNA | |
| 11 | JC66-00955A | GEAR-M_LIFT COUPLING | 1 | SNA | |
| 12 | | GUIDE-GEARED | 1 | SNA | |
| 13 | | GEAR-COUPLING | 1 | SNA | |
| 14 | | LEVER-MOTOR | 1 | SNA | |
| 15 | | BRKT-LEVER-MOTOR | 1 | SNA | |
| 16 | | SPRING-TS | 1 | SNA | |
| 17 | | LEVER-ARM FRICTION | 1 | SNA | |
| 18 | | PCB-MAIN | 1 | SNA | |
| 19 | | PLATE-SIDE R | 1 | SNA | |
| 20 | | PLATE-HINGE BRKT | 2 | SNA | |
| 21 | | COVER-DUMMY R | 1 | SNA | |
| 22 | | SHAFT-HINGE DOOR | 2 | SNA | |
| 23 | | COVER-DUMMY L | 1 | SNA | |
| 24 | 6044-000231 | RING-E (ID5) | 3 | SA | |
| 25 | 6044-000129 | RING-E (ID6) | 1 | SNA | |
| 26 | 6044-000125 | RING-E (ID4) | 1 | SC | |
| 27 | 6003-000269 | SCREW-TAPTITE M3, L6 | 21 | SA | |
| 28 | 6002-000440 | SCREW TAPTITE | 5 | SNA | |

5.26 LIFT L HCF

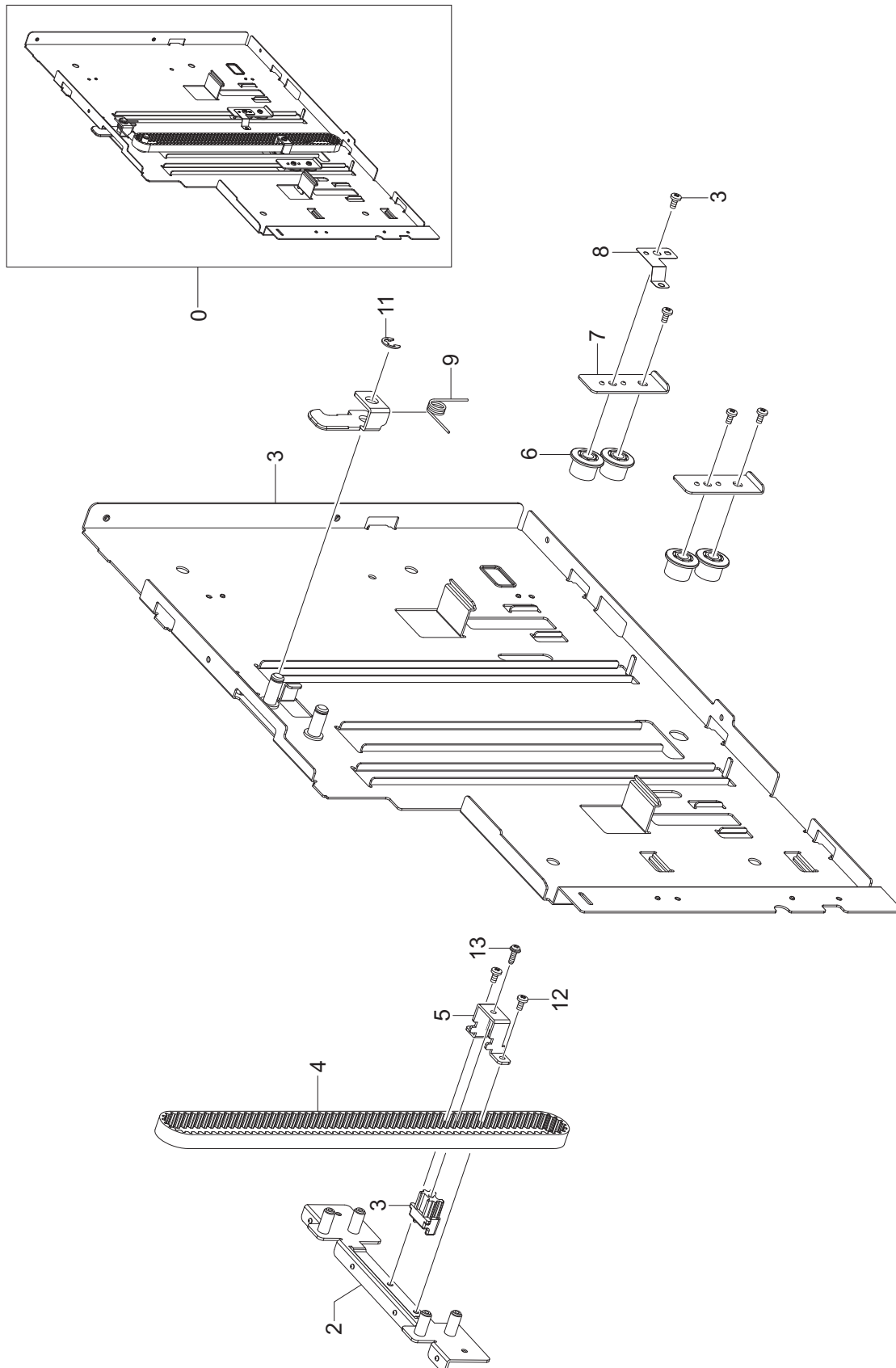


LIFT_L_HCF Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|----------------------|------|---------|--------|
| 0 | | SUB-LIFT LEFT | 1 | SNA | |
| 1 | | PLATE-LIFT L | 1 | SNA | |
| 2 | | BRKT-KNOCK UP_L | 1 | SNA | |
| 3 | | BELT-STOPPER | 1 | SNA | |
| 4 | | TIMING BELT_S5M(625) | 1 | SNA | |
| 5 | | BRKT-STOPPER | 1 | SNA | |
| 6 | | ROLLER-GUIDE KU | 4 | SNA | |
| 7 | | BRKT-GUIDE ROLLER(L) | 2 | SNA | |
| 8 | | GROUND-LEFT_HCF | 1 | SNA | |
| 9 | JC66-00100A | GEAR-6 | 1 | SNA | |
| 10 | 6044-000231 | RING-E(ID5) | 1 | SA | |
| 11 | | SPRING-TS_DR | 1 | SNA | |
| 12 | | HOOK-LOCKER | 1 | SNA | |
| 13 | 6044-000129 | RING-E(ID6) | 1 | SNA | |
| 14 | 6003-000269 | SCREW-TAPTITE (M3X6) | 4 | SA | |
| 15 | 6002-000440 | SCREW-TAPTITE (M3X8) | 1 | SNA | |

5.27 LIFT_R HCF

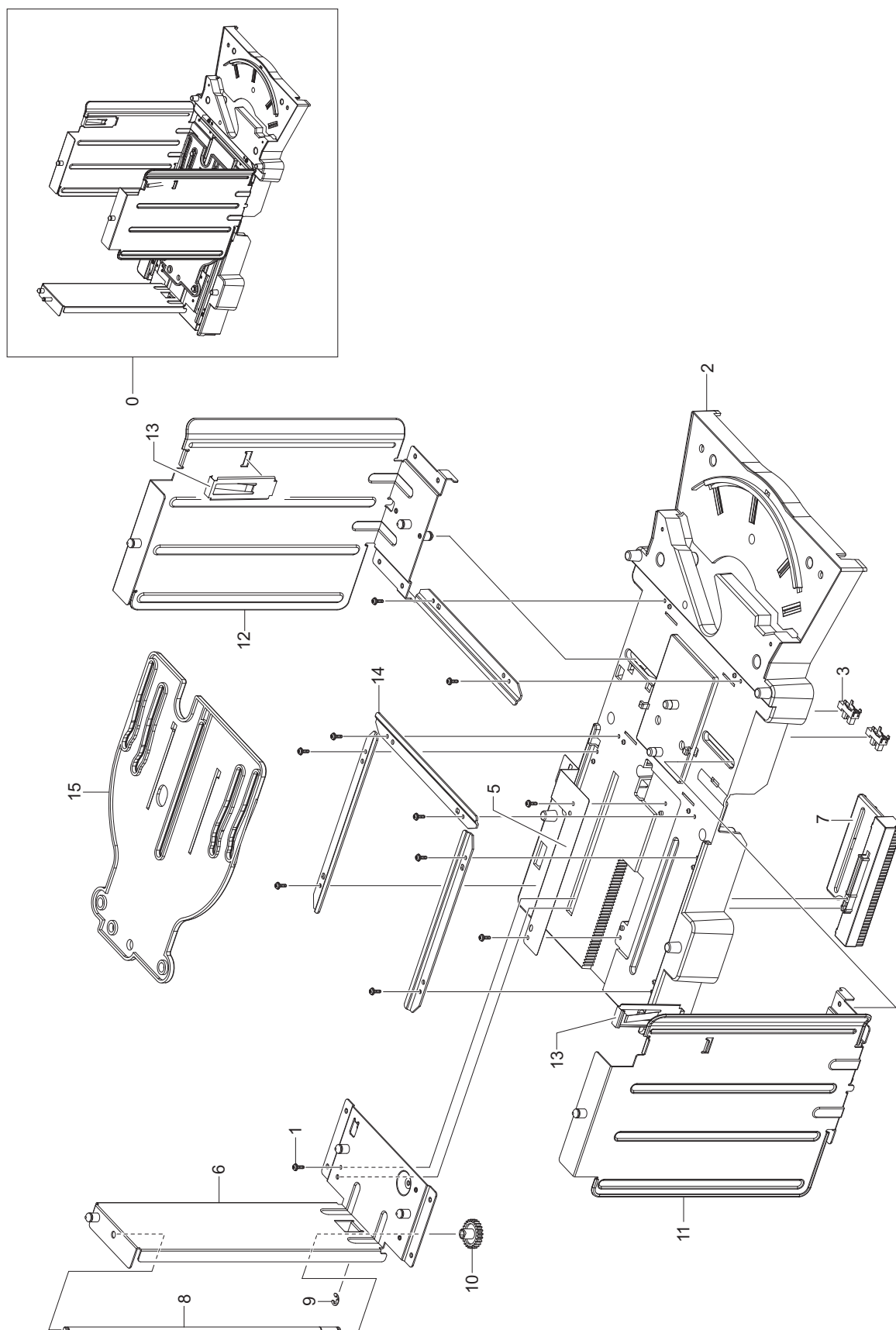


LIFT_R_HCF Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|----------------------|------|---------|--------|
| 0 | | SUB-LIFT RIGHT | 1 | SNA | |
| 1 | | PLATE-LIFT R | 1 | SNA | |
| 2 | | BRKT-KNOCK UP_R | 1 | SNA | |
| 3 | | BELT-STOPPER | 1 | SNA | |
| 4 | | TIMING BELT_S5M(625) | 1 | SNA | |
| 5 | | BRKT-STOPPER | 1 | SNA | |
| 6 | | ROLLER-GUIDE KU | 4 | SNA | |
| 7 | | BRKT-GUIDE ROLLER(L) | 2 | SNA | |
| 8 | | GROUND-LEFT_HCF | 1 | SNA | |
| 9 | | SPRING-TS_DR | 1 | SNA | |
| 10 | | HOOK-LOCKER | 1 | SNA | |
| 11 | 6044-000129 | RING-E(ID6) | 1 | SNA | |
| 12 | 6003-000269 | SCREW-TAPTITE (M3X6) | 4 | SA | |
| 13 | 6002-000440 | SCREW-TAPTITE (M3X8) | 1 | SNA | |

5.28 ASSETTE HCF

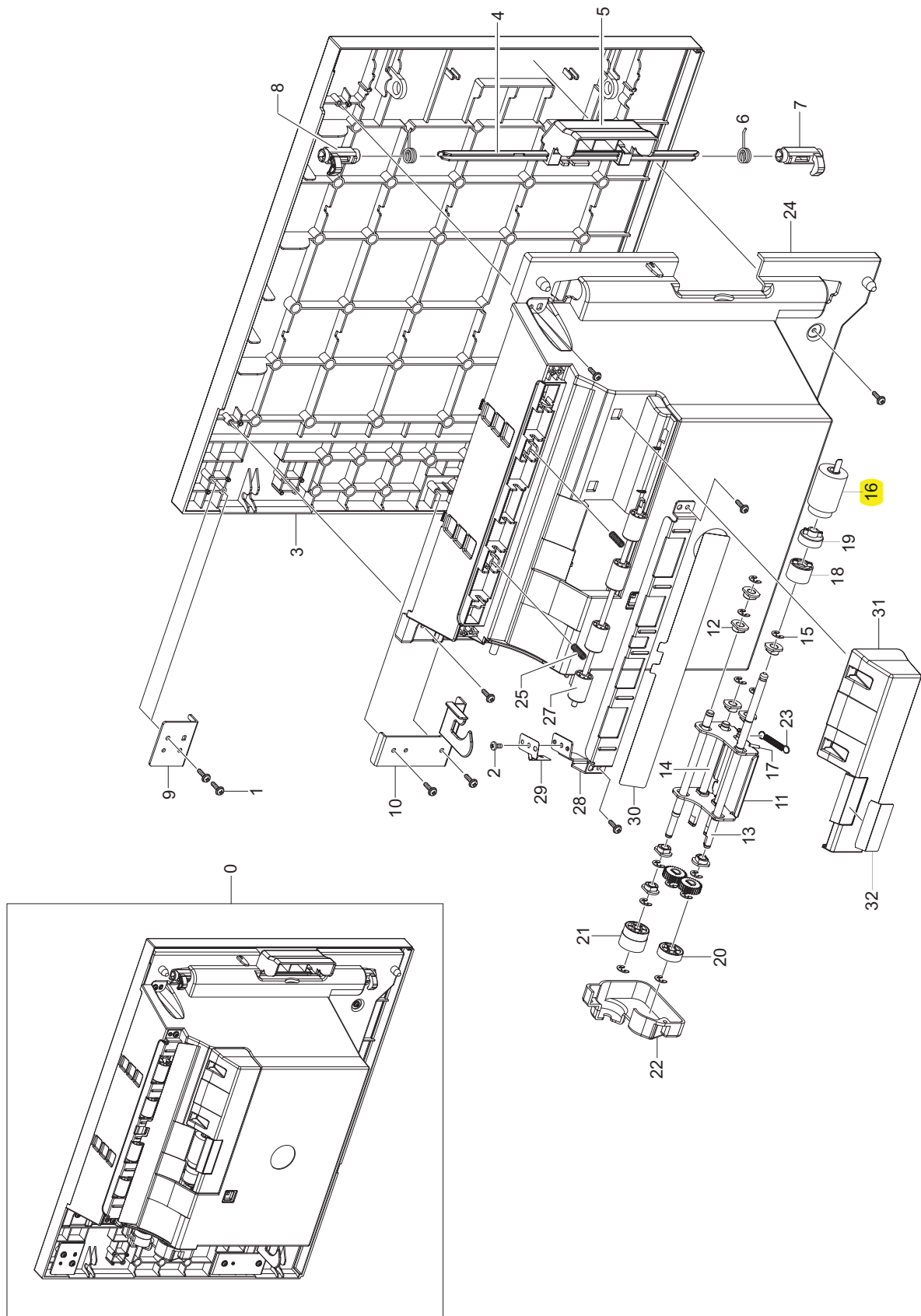


ASSETTE_HCF Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|-------------------------|------|---------|--------|
| 0 | | ELA UNIT-CASSETTE_HCF | 1 | SNA | |
| 1 | 6002-000440 | SCREW-TAPPING (M3X8) | 10 | SNA | |
| 2 | | FRAME-CASSETTE | 1 | SNA | |
| 3 | 0604-001095 | PHOTO-INTERRUPTER | 2 | SA | |
| 4 | | CBF HARNESS-PAPER LEVEL | 1 | SNA | |
| 5 | | GROUND-REAR_HCF | 1 | SNA | |
| 6 | | PLATE-PAPER REAR | 1 | SNA | |
| 7 | | RACK-GEAR REAR | 1 | SNA | |
| 8 | | SHAFT-GUIDE REAR | 1 | SNA | |
| 9 | 6044-000231 | RING-E(ID5) | 1 | SA | |
| 10 | | GEAR-GUIDE REAR | 2 | SNA | |
| 11 | | PLATE-PAPER SIDE L | 1 | SNA | |
| 12 | | PLATE-PAPER SIDE R | 1 | SNA | |
| 13 | JC70-10929A | IPR-SPR PLATE G/SIDE | 2 | SNA | |
| 14 | | PLATE-GUIDE RAIL | 4 | SNA | |
| 15 | | GUIDE-SIDE RAIL | 2 | SNA | |

5.29 DOOR FRONT HCF

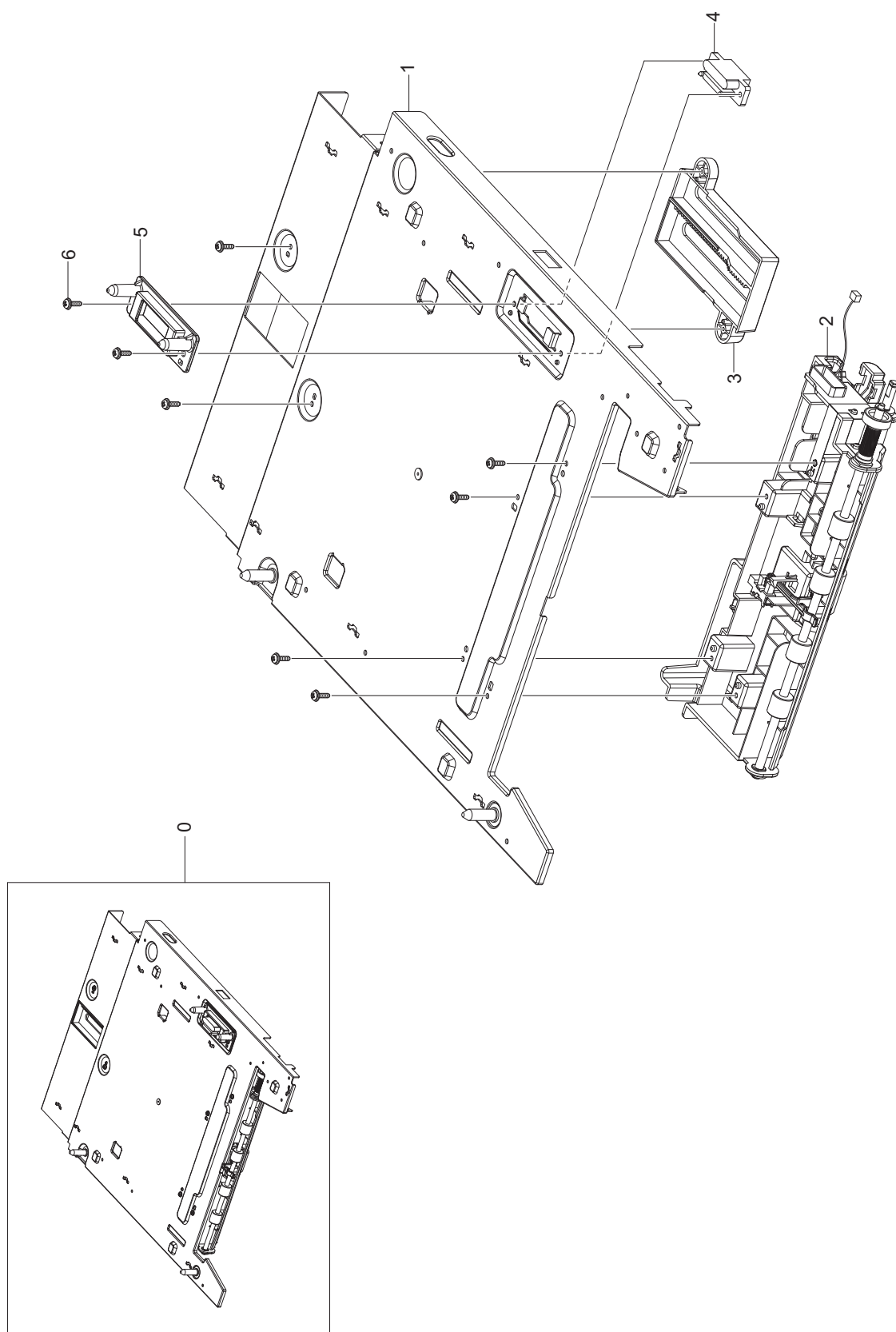


DOOR FRONT_HCF Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|------------------------|------|---------|--------|
| 0 | | MEA UNIT-DOOR FRONT | 1 | SNA | |
| 1 | 6002-000440 | SCREW-TAPPING (M3X8) | 12 | SNA | |
| 2 | 6003-000269 | SCREW-TAPTITE (M3X6) | 1 | SA | |
| 3 | | COVER-FRONT | 1 | SNA | |
| 4 | JC61-01404A | BRACKET-P-HANDLE SCF | 1 | SNA | |
| 5 | | HANDLE-DOOR | 1 | SNA | |
| 6 | | SPRING-TS_LOCK | 2 | SNA | |
| 7 | JC64-00423A | LOCKER-REAR_L | 1 | SNA | |
| 8 | JC64-00424A | LOCKER-REAR_R | 1 | SNA | |
| 9 | | BRKT-HINGE | 2 | SNA | |
| 10 | | BRKT-HINGE GEARED | 1 | SNA | |
| 11 | | BRKT-RETARD | 1 | SNA | |
| 12 | | BUSH-6_D(L5) | 6 | SNA | |
| 13 | | SHAFT-RETARD M | 1 | SNA | |
| 14 | | SHAFT-RETARD S | 1 | SNA | |
| 15 | 6044-000125 | RING-E(ID4) | 7 | SC | |
| 16 | JC97-02259A | MEA UNIT-ROLLER PU | 1 | SNA | |
| 17 | JC66-00939A | SHAFT-LOCK | 1 | SNA | |
| 18 | JC67-00126A | COUPLER-TORQUE LIMITER | 1 | SNA | |
| 19 | JC66-00976A | JOINT-M_RETARD | 1 | SNA | |
| 20 | | GEAR-RETARD ACT | 1 | SNA | |
| 21 | | GEAR-RETARD CON | 1 | SNA | |
| 22 | | COVER-RETARD_GEAR | 1 | SNA | |
| 23 | | SPRING-ES | 1 | SNA | |
| 24 | | COVER-RETARD | 1 | SNA | |
| 25 | JC61-70959B | SPRING-ETC-FEED | 2 | SNA | |
| 26 | JC66-00661A | SHAFT-EXIT IDLE | 1 | SNA | |
| 27 | JC66-01022A | ROLLER-M_IDLE SCF | 4 | SNA | |
| 28 | | PLATE-ROLLER GUIDE | 1 | SNA | |
| 29 | JC63-00824A | GROUND-P-DOOR INNER | 1 | SNA | |
| 30 | JC63-00754A | SHEET-GUIDE FILM SCF | 1 | SNA | |
| 31 | | COVER-RETARD_DUMMY | 1 | SNA | |
| 32 | JC63-00747A | SHEET-GUIDE RETARD | 1 | SNA | |

5.30 HOU-UPPER HCF

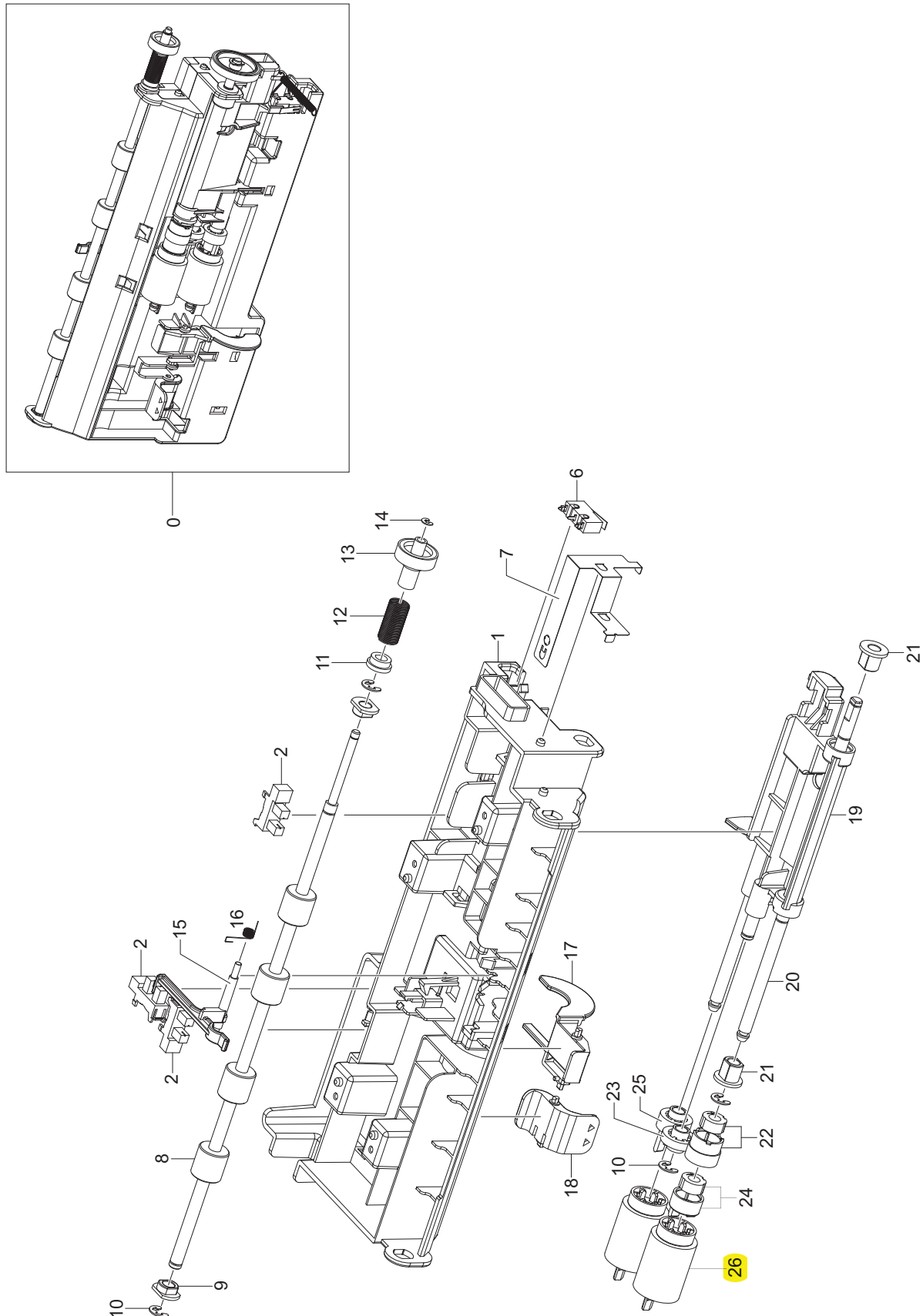


HOU-UPPER_HCF Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|----------------------|------|---------|--------|
| 0 | | ELA HOU-UPPER_HCF | 1 | SNA | |
| 1 | | PLATE-TOP_HCF | 1 | SNA | |
| 2 | | ELA UNIT-PICK UP | 1 | SNA | |
| 3 | | GUIDE-TOP REAR_DUMMY | 1 | SNA | |
| 4 | | CBF HARNESS-HCF | 1 | SNA | |
| 5 | JC61-01742A | HOLDER-CONNECTOR_SCF | 1 | SA | |
| 6 | 6002-000440 | SCREW-TAPPING (M3X8) | 8 | SNA | |

5.31 PICKUP_HCF

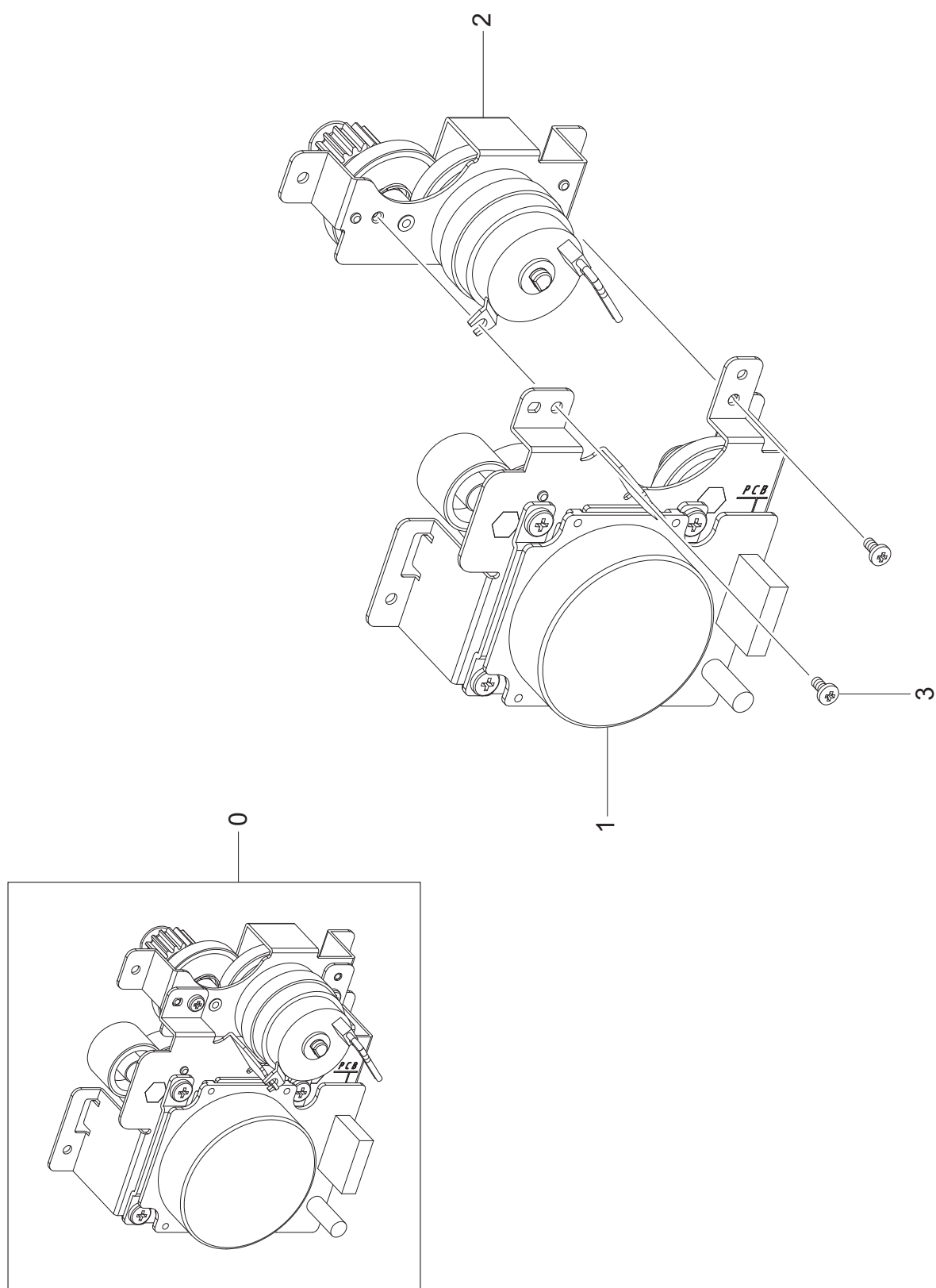


PICKUP_HCF Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|------------------------|------|---------|--------|
| 0 | | ELA UNIT-PICK UP | 1 | SNA | |
| 1 | | FRAME-BASE_PICK UP | 1 | SNA | |
| 2 | 0604-001095 | PHOTO-INTERRUPTER | 3 | SA | |
| 3 | | CBF HARNESS-SENSOR | 1 | SNA | |
| 4 | | CBF HARNESS-ELEV MOTOR | 1 | SNA | |
| 5 | | CBF HARNESS-COVER OPEN | 1 | SNA | |
| 6 | JC39-00477A | HARNESS-MOTOR_SW | 1 | SNA | |
| 7 | | GROUND-SHAFT PU | 1 | SNA | |
| 8 | | ROLLER-HCF DRV | 1 | SNA | |
| 9 | | BUSH-6_D(L5) | 2 | SNA | |
| 10 | 6044-000125 | RING-E(ID4) | 2 | SC | |
| 11 | JG72-40732A | PMO-BUSHING HOLDER | 1 | SNA | |
| 12 | JC61-00062A | SPRING ETC-CLUTCH | 1 | SNA | |
| 13 | JC66-00964A | GEAR-M_FEED SCF | 1 | SNA | |
| 14 | 6044-000159 | RING-C(ID3) | 1 | SA | |
| 15 | JC66-01275A | ACTUATOR-FEED | 1 | SA | |
| 16 | 6107-001261 | SPRING-TS | 1 | SA | |
| 17 | JC61-01350A | LEG-M_ACT NO PAPER | 1 | SNA | |
| 18 | | LIMITIED-PAPER | 1 | SNA | |
| 19 | JC61-01299A | GUIDE-M_UPPER PICK UP | 1 | SNA | |
| 20 | | SHAFT-PICK UP | 1 | SNA | |
| 21 | JC61-00884A | BUSH-6_D(L) | 2 | SNA | |
| 22 | JC97-02291A | MEA UNIT-GEAR ONE WAY | 1 | SNA | |
| 23 | JC66-00940A | GEAR-M_IDLE PU | 1 | SNA | |
| 24 | JC97-02292A | MEA UNIT-IDLE FORWARD | 1 | SNA | |
| 25 | JC66-00943A | GEAR-M_PU JOINT | 1 | SNA | |
| 26 | JC97-02259A | MEA UNIT-ROLLER PU | 2 | SNA | |

5.32 DRIVE HCF

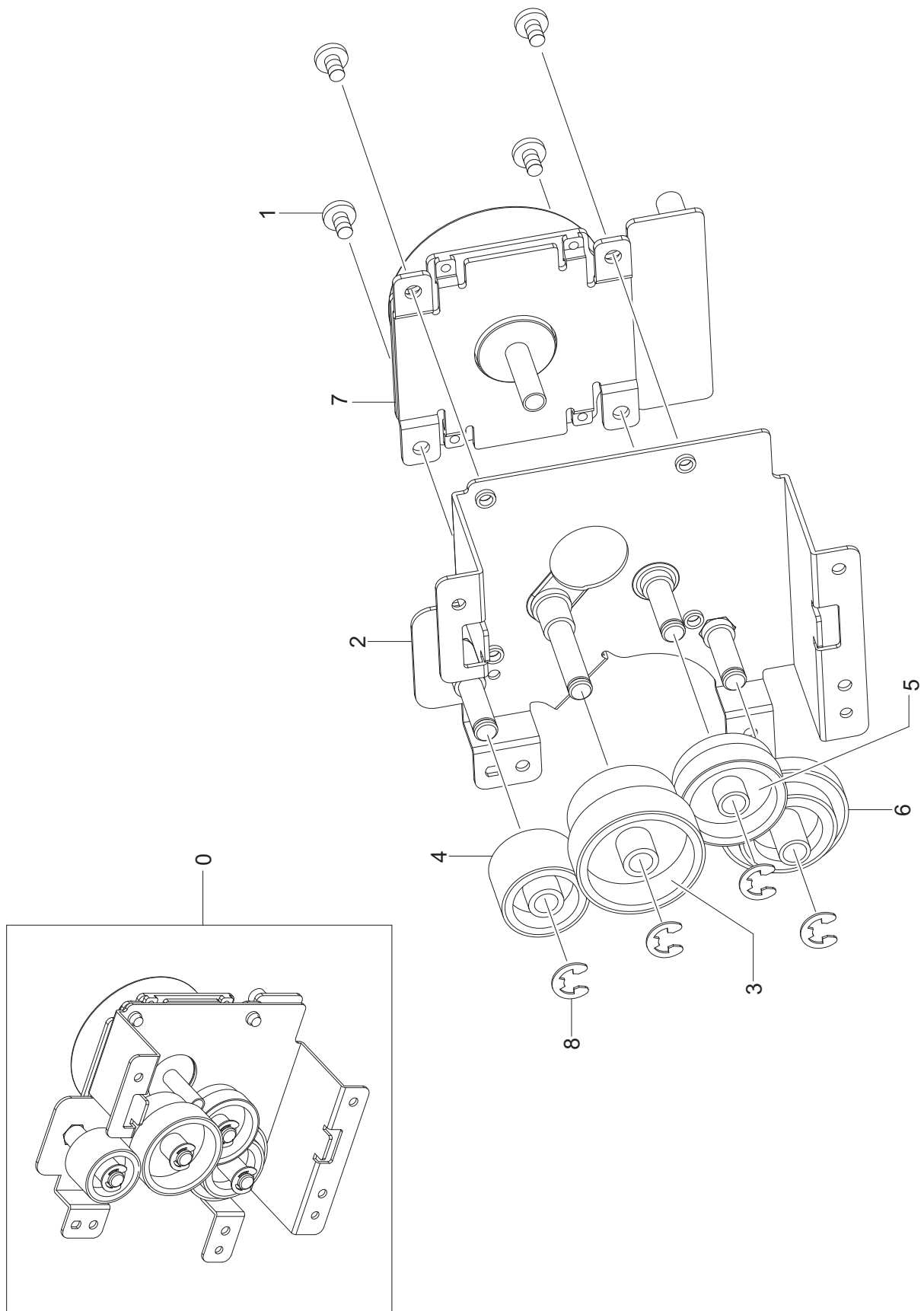


DRIVE_HCF Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|----------------------|------|---------|--------|
| 0 | | ELA HOU-HCF DRIVE | 1 | SNA | |
| 1 | | SUB-DRIVE | 1 | SNA | |
| 2 | | SUB-CLUTCH | 1 | SNA | |
| 3 | 6003-000269 | SCREW-TAPTITE (M3X6) | 2 | SA | |

5.33 SUB-DRIVE HCF

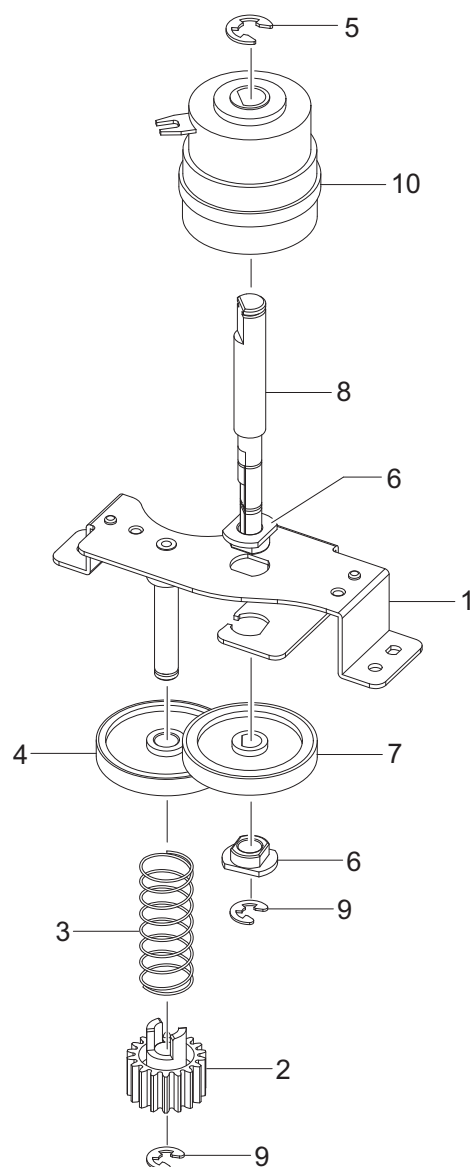
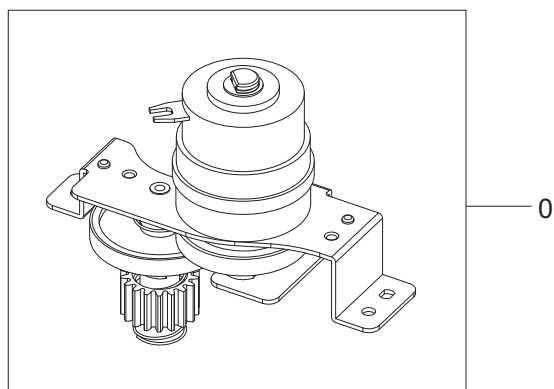


SUB-DRIVE_HCF Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|----------------------|------|---------|--------|
| 0 | | SUB-DRIVE | 1 | SNA | |
| 1 | 6003-000301 | SCREW-TAPTITE (M4X6) | 4 | SNA | |
| 2 | | BRKT-DRIVE | 1 | SNA | |
| 3 | JC66-00965A | GEAR-M_FD IDLE A SCF | 1 | SNA | |
| 4 | JC66-00966A | GEAR-M_FD IDLE B SCF | 1 | SNA | |
| 5 | JC66-00967A | GEAR-M_PU IDLE A SCF | 1 | SNA | |
| 6 | JC66-00968A | GEAR-M_PU IDLE C SCF | 1 | SNA | |
| 7 | JC31-00090A | MOTOR DC(BLDC) | 1 | SA | |
| 8 | 6044-000231 | RING-E(ID5) | 4 | SA | |

5.34 CLUTCH_HCF



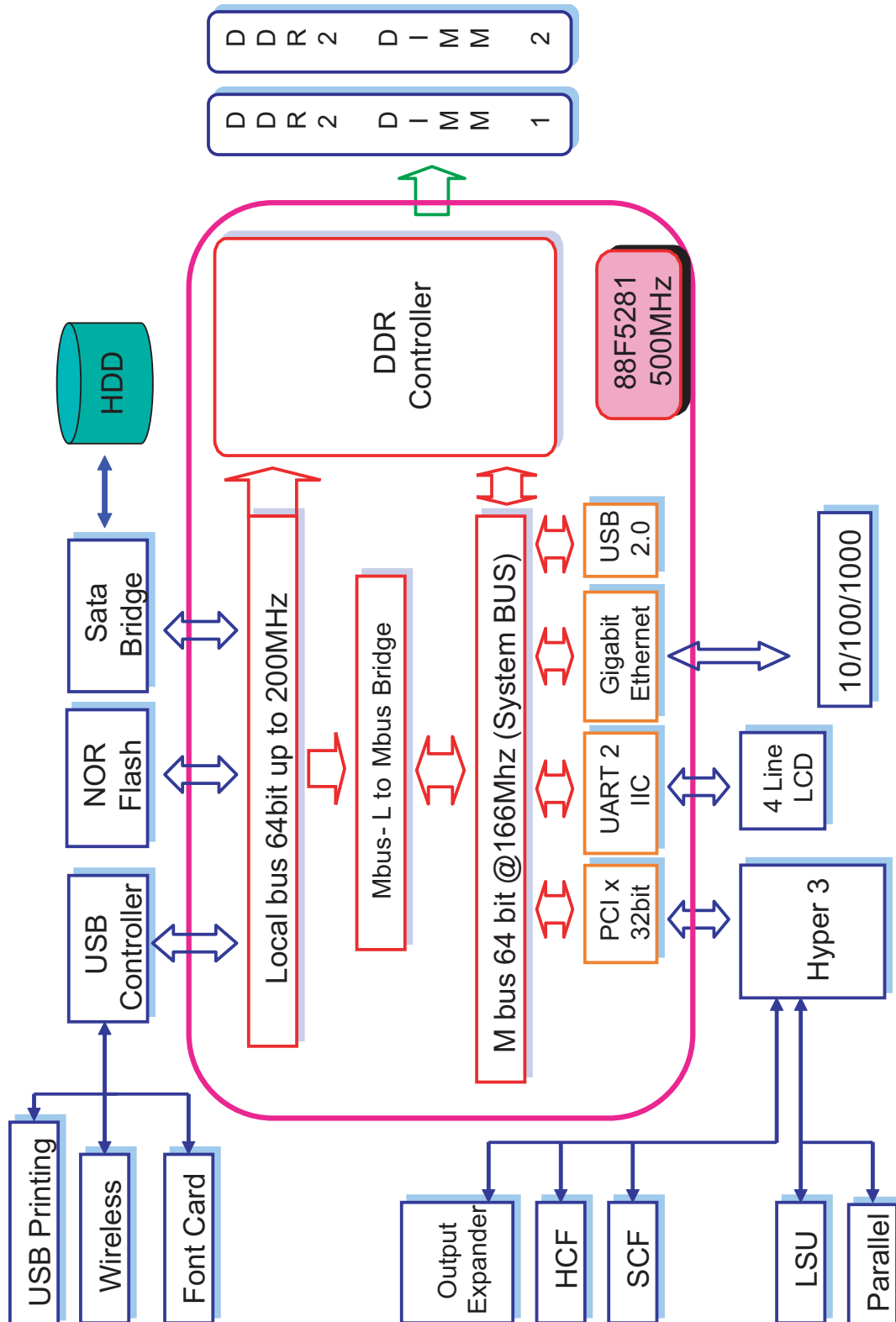
CLUTCH_HCF Parts List

SA : SERVICEAVAILABLE, SNA : SERVICE not AVAILABLE

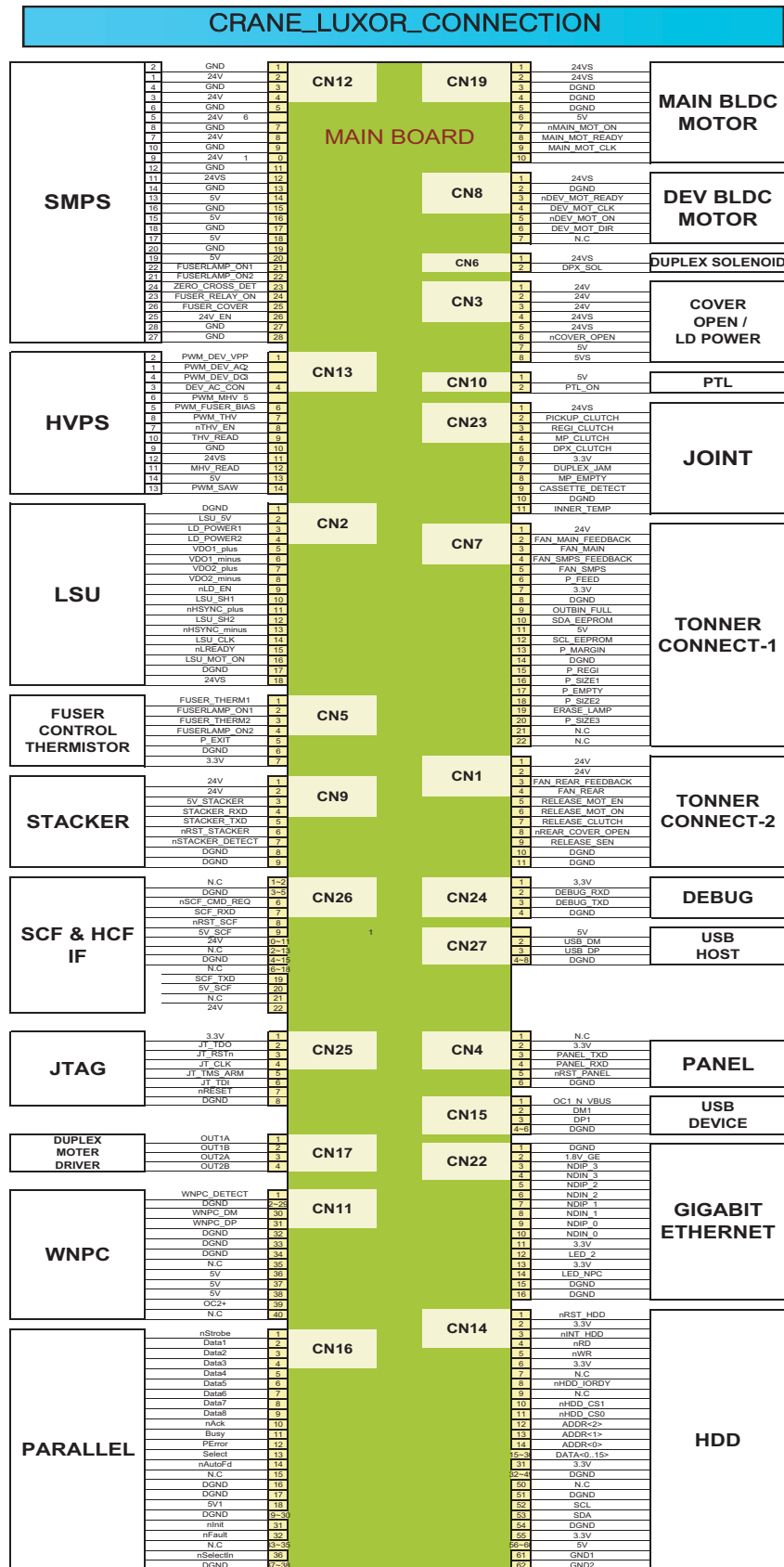
| Drawer# | MFG_code | Description | Q'ty | Service | Remark |
|---------|-------------|----------------------|------|---------|--------|
| 0 | | SUB-CLUTCH | 1 | SNA | |
| 1 | | BRKT-CLUTCH | 1 | SNA | |
| 2 | | GEAR-RETARD COUPLE | 1 | SNA | |
| 3 | | SPRING-CS_COUPLE | 1 | SNA | |
| 4 | | GEAR-RETARD | 1 | SNA | |
| 5 | 6044-000129 | RING-E(ID6) | 1 | SNA | |
| 6 | | BUSH-6_D(L5) | 2 | SNA | |
| 7 | JC66-00973A | GEAR-M_PICKUP IDLE B | 1 | SNA | |
| 8 | | SHAFT-EL24 CLUTCH | 1 | SNA | |
| 9 | 6044-000129 | RING-E(ID6) | 1 | SNA | |
| 10 | | CLUTCH-5K Z32(EL24) | 1 | SNA | |

6. System Diagram

6.1 Block Diagram



6.2 Connection Diagram



7. Reference Information

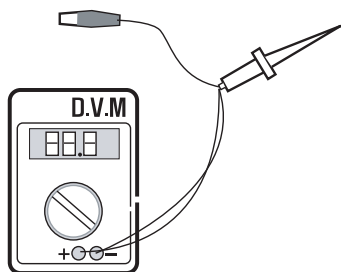
This chapter contains the tools list, list of abbreviations used in this manual, and a guide to the location space required when installing the printer. A definition of tests pages and Wireless Network information definition is also included.

7.1 Tool for Troubleshooting

The following tools are recommended safe and easy troubleshooting as described in this service manual.

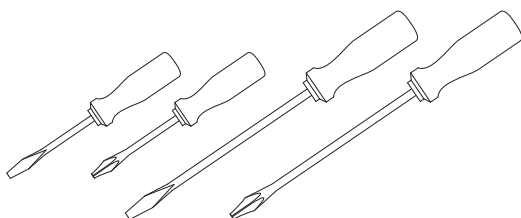
- **DVM (Digital Volt Meter)**

Standard : Indicates more than 3 digits.



- **Driver**

Standard : “-” type, “+” type (M3 long, M3 short, M2 long, M2 short).



- **Tweezers**

Standard : For general home use, small type.



- **Cotton Swab**

Standard : For general home use, for medical service.

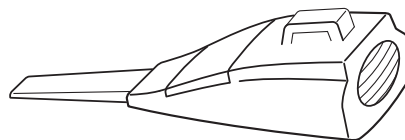


- **Cleaning Equipments**

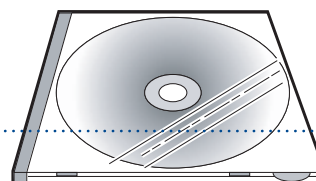
Standard : An IPA (Isopropyl Alcohol) dry wipe tissue or a gentle neutral detergent and lint-free cloth.



- **Vacuum Cleaner**



- **Software (Driver) installation CD ROM**



7.2 Acronyms and Abbreviations

The table below explains abbreviations used in this service manual.

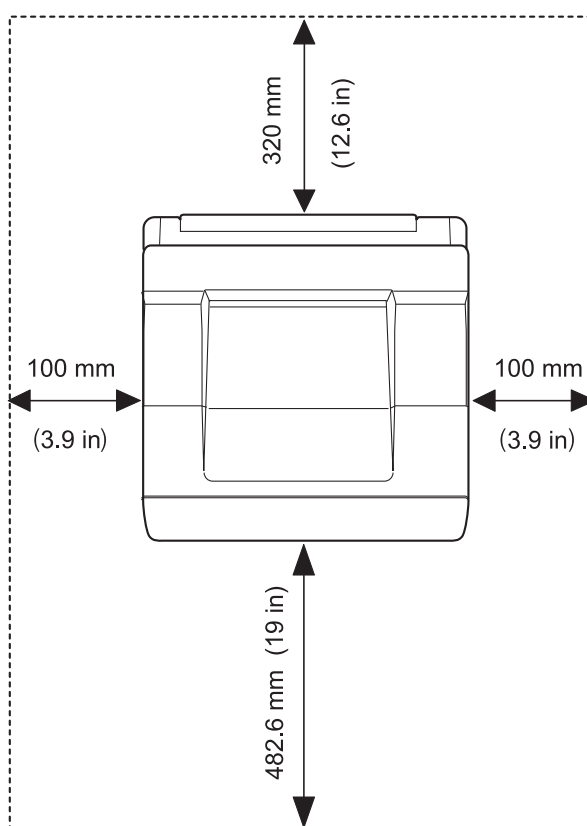
The contents of this service manual are declared with abbreviations in many parts. Please refer to the table.

| | |
|--------|---|
| AP | Access Point |
| AC | Alternating Current |
| APC | Auto Power Control |
| ASIC | Application Specific Integrated Circuit |
| ASSY | assembly |
| BIOS | Basic Input Output System |
| BLDC | Brush-less Direct Current |
| CMOS | Complementary Metal Oxide Semiconductor |
| CN | connector |
| CON | connector |
| CPU | Central Processing Unit |
| dB | decibel |
| dBA | decibel A |
| dBm | decibel milliwatt |
| DC | direct current |
| DCU | Diagnostic Control Unit |
| DPI | Dot Per Inch |
| DRAM | Dynamic Random Access Memory |
| DVM | Digital Voltmeter |
| ECP | Enhanced Capability Port |
| EDC | Embedded Diagnostic control |
| EEPROM | Electrically Erasable Programmable Read Only Memory |
| EMI | Electro Magnetic Interference |
| EP | electrophotographic |
| EPP | Enhanced Parallel Port |
| FPOT | First Printout Time |
| F/W | firmware |
| GDI | graphics device interface |
| GND | ground |
| HBP | Host Based Printing |
| HDD | Hard Disk Drive |
| H/H | High temperature and high marshy place |
| HV | high voltage |
| HVPS | High Voltage Power Supply |
| I/F | interface |
| I/O | Input and Output |

| | |
|-------|---|
| IC | integrated circuit |
| IDE | Intelligent Drive electronics or Imbedded Drive Electronics |
| IEEE | Institute of Electrical and Electronics Engineers, Inc |
| IPA | Isopropyl Alcohol |
| IPM | Images Per Minute |
| LAN | local area network |
| lb | pound(s) |
| LBP | Laser Beam Printer |
| LCD | Liquid Crystal Display |
| LED | Light Emitting Diode |
| L/L | Low temperature and low marshy place |
| LSU | Laser Scanning Unit |
| MB | megabyte |
| MHz | megahertz |
| MPF | Multi Purpose Feeder |
| NIC | Network Interface Card |
| N/N | Normal temperature and normal marshy place |
| NVRAM | nonvolatile random access memory |
| OPC | Organic Photo Conductor |
| OP | Operation Panel Equipment |
| PBA | Printed Board Assembly |
| PCL | Printer Command Language , Printer Control Language |
| PDL | Page Discription Language |
| PPM | Page Per Minute |
| PPS | Pulse Per Second |
| PS | Post Script |
| PTL | Pre-Transfer Lamp |
| PWM | Pulse Width Modulation |
| Q-PID | Quick Printer Initiating Device |
| Q'ty | quantity |
| RAM | Random Access Memory |
| ROM | Read Only Memory |
| SCF | Second Cassette Feeder |
| SMPS | Switching Mode Power Supply |
| SPGP | SEC Printer Graphic Processor |
| SPL | SEC Printer Language |
| Spool | Simultaneous Peripheral Operation Online |
| SW | switch |
| sync | synchronous or synchronization |
| USB | Universal Serial Bus |
| WECA | Wireless Ethernet Compatibility Alliance |

7.3 Select a location for the printer

- Leave enough room to open the printer trays, covers, and allow for proper ventilation. (see diagram below)
- Provide the proper environment :
 - A firm, level surface
 - Away from the direct airflow of air conditioners, heaters, or ventilators
 - Free of extreme fluctuations of temperature, sunlight, or humidity
 - Clean, dry, and free of dust

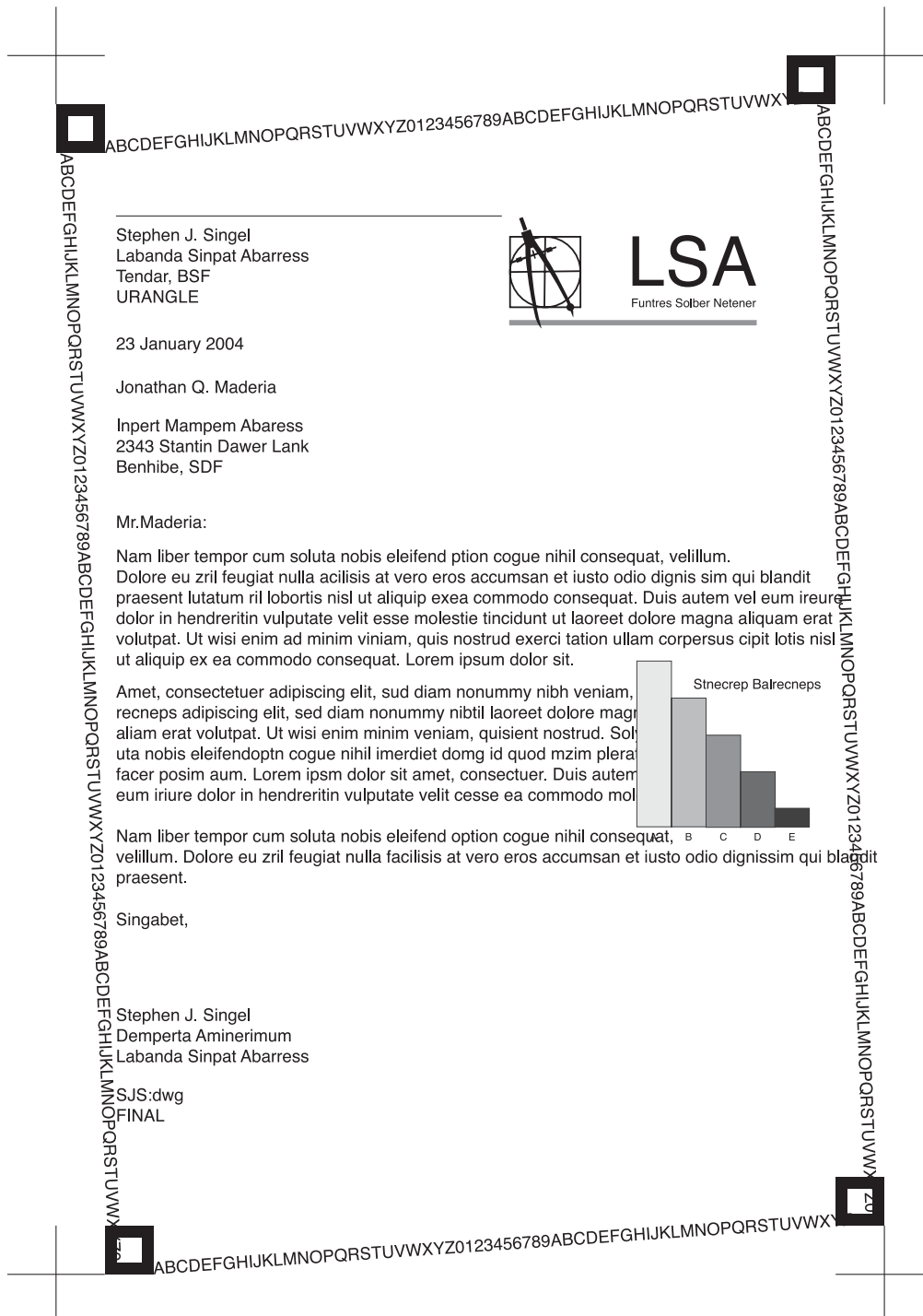


7.4 The Sample Pattern for the Test

The sample pattern shown in below is the standard pattern used in the factory.
The life of the toner cartridge and the printing speed are measured using the pattern shown below.
(The image is 70% of the actual A4 size).

A4 ISO 19752 Standard Pattern

This test page is reproduced at 70% of the normal A4 size



7.5 Installing Accessories

7.5.1 Precautions When Installing Printer Accessories

Never remove the control board cover while the printer is plugged in.

To avoid the possibility of an electrical shock, always disconnect the power cord when installing or removing ANY internal or external printer option.

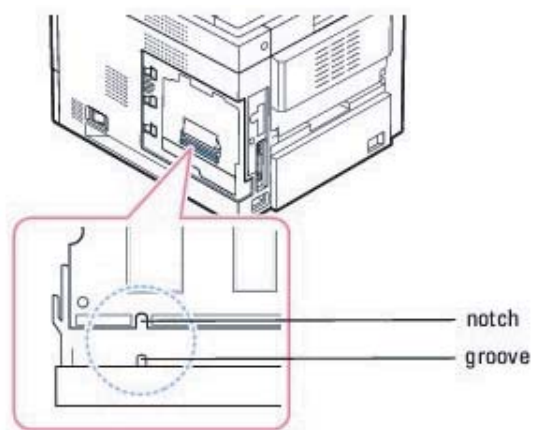
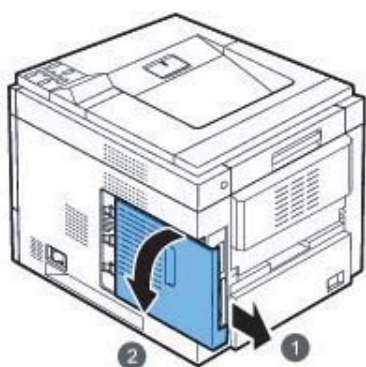
The control board and internal accessories (wireless network interface card, DIMM, and hard disk) are sensitive to static electricity. Before installing or removing internal accessories, discharge static electricity from your body by touching something metal, such as the metal back plate on any device plugged into a grounded power source. If you walk around before finishing installation, discharge any static electricity once again.

7.5.2 Installing Printer Memory

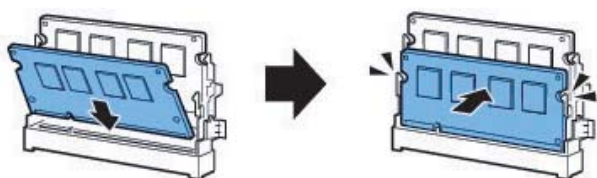
Additional printer memory is provided on a Dual In-line Memory Module (DIMM). The Dell 5330dn Mono Laser Printer has 256 MB of memory. It can be expanded to 768 MB.

NOTE: Your printer supports only Dell DIMMs. Order Dell DIMMs online at www.dell.com.

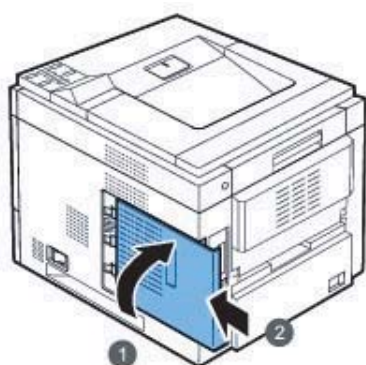
1. Power the printer off and unplug all cables from the printer.
2. Grasp the control board cover and remove it.
3. Remove a new memory DIMM from its antistatic package.



4. Locate the extra DIMM slot and align the notch on the DIMM with the groove at the DIMM slot, holding the DIMM by its edges.
5. Push the DIMM into the printer until it snaps into place. Ensure that the latches fit over the notches located on either side of the DIMM.



6. Close the control board cover by aligning the groove on it with the notch on the printer and sliding it.



7. Reconnect the power cord and printer cable, and turn the printer on.

7.5.2.1 Activating the added memory in the printer properties

After installing the memory DIMM, you need to select it in the printer properties of the printer driver so that you can use it:

Dell 5330dn Mono Laser Printer

1. Click the Windows Start menu.
2. For Windows NT 4.0/2000, select Settings and then Printers.
For Windows XP/2003, select Printers and Faxes.
For Windows Vista, select Control Panel Hardware and Sound Printers.
3. Select the Dell 5330dn Mono Laser Printer.
4. Right-click the printer icon and select Properties.
5. Click the Printer tab and select 768 from the Memory Size drop-down list in the Printer Memory section.
6. Click OK.

Dell 5330dn Mono Laser Printer PS

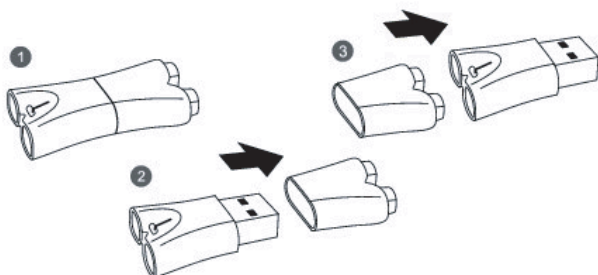
1. Ensure the PostScript printer driver is installed on your computer. For details about installing the PS printer driver, see "Installing Software in Windows".
2. Click the Windows Start menu.
3. For Windows 2000, select Settings and then Printers.
For Windows XP/2003, select Printers and Faxes.
For Windows Vista, select Control Panel Hardware and Sound Printers.
4. Select the Dell 5330dn Mono Laser Printer PS printer.
5. Right-click the printer icon and select Properties.
6. Click Device Settings.
7. Select 768 MB from the Printer Memory drop-down list in the Installable Option section.
8. Click OK.

7.5.3 Installing USB Font Card

USB font cards can be used to permanently store additional Fonts and forms. This card can be used to enable the printer to print barcodes and logos. Once the card is installed, the printer automatically detects the additional fonts in the card.

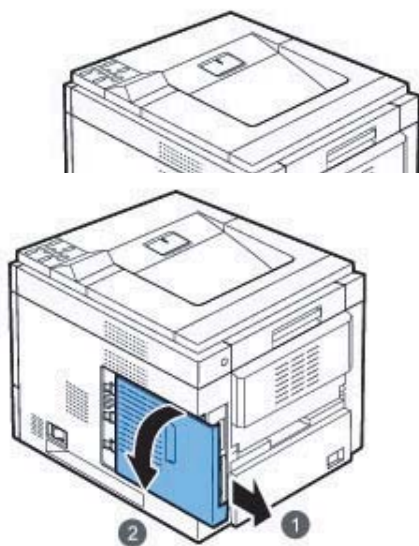
Please contact Dell sales team in your region for the USB font card.

1. Remove the new USB Font Card from its package, as shown in the following figure.



2. Power the printer off and unplug all cables from the printer.

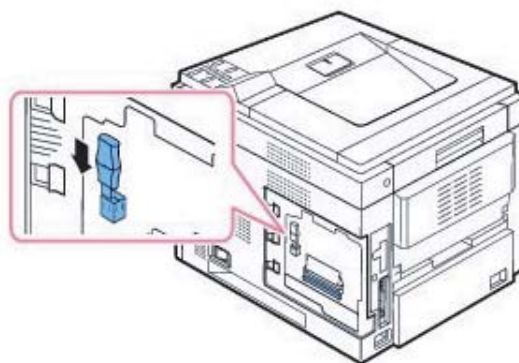
3. Grasp the control board cover and remove it.



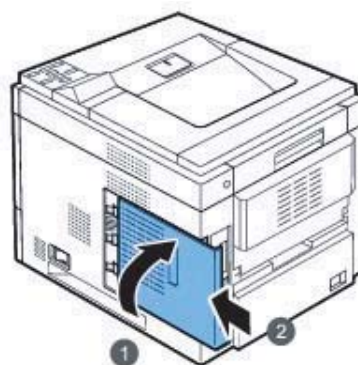
4. Insert a USB Font Card into the outer USB slot on the control board.

CAUTION:

Do not insert a USB Font Card into the inner USB memory slot. You could damage the control board of the printer.



5. Close the control board cover by aligning the groove on it with the notch on the printer and sliding it.

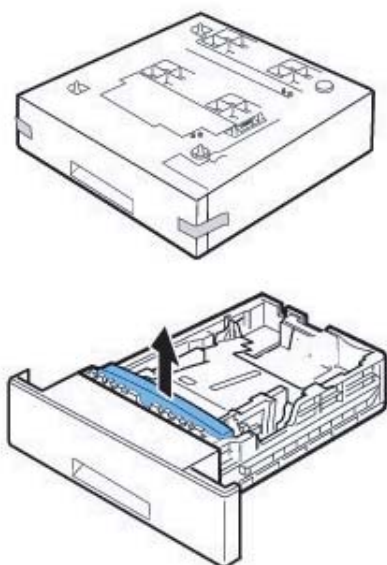


6. Reconnect the power cord and printer cable, and turn the printer on.

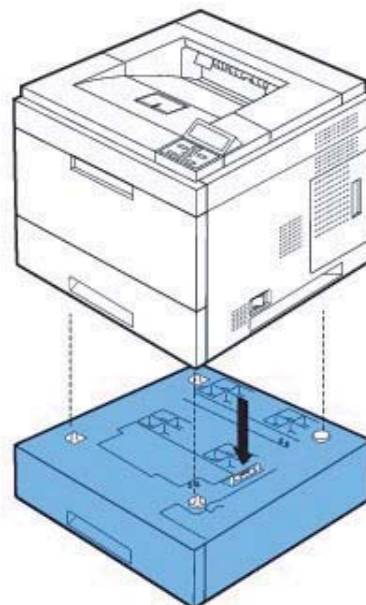
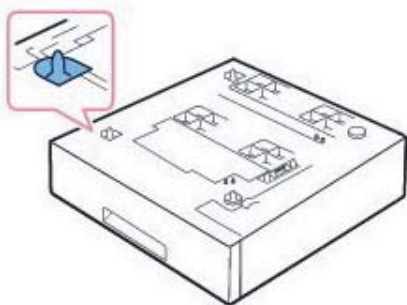
7.5.4 Installing Optional Tray

You can increase the paper handling capacity of your printer by installing optional trays. Each tray holds 500 sheets of paper.

1. Power the printer off and unplug all cables from the printer.
2. Remove the packing tape and the packing material inside the optional tray.
4. Place the printer over the tray aligning the feet on the printer with the alignment pins in the optional tray.



3. Find the location of the paper option tray connector and alignment pins.

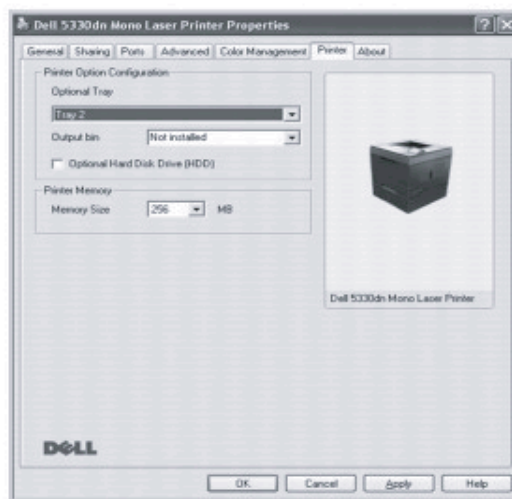


5. Load paper in the optional tray. For information about loading paper in this tray, see "Loading Print Media".
6. Reconnect the power cord and cables and then power on the printer.

When you print a document on paper loaded in the optional tray, you must configure the properties of the printer driver.

To access the properties of the printer driver:

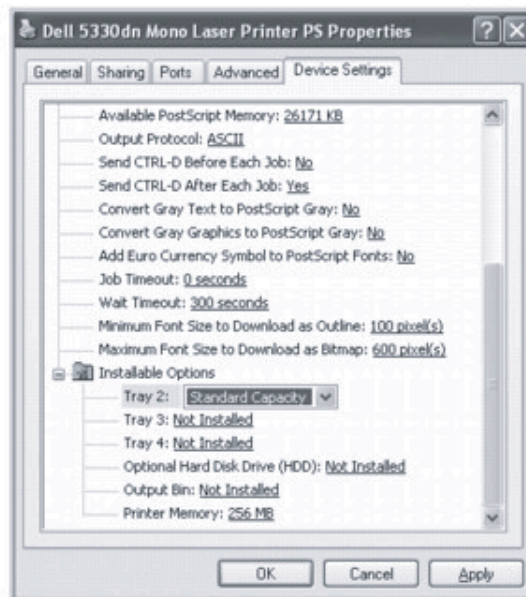
1. Click the Windows Start button.
2. For Windows NT 4.0/2000, select Settings and then Printers.
For Windows XP/2003, select Printers and Faxes.
For Windows Vista, select Control Panel > Hardware and Sound > Printers.
3. Select the Dell 5330dn Mono Laser Printer.
4. Right-click the printer icon and select Properties.
5. Click the Printer tab and select your Optional Tray from the Optional Tray drop-down list.



6. Click OK and print the document.

To set the tray in the printer properties of the PostScript printer driver.

1. Click the Windows Start button.
2. For Windows 2000, select Settings and then Printers.
For Windows XP/2003, select Printers and Faxes.
For Windows Vista, select Control Panel > Hardware and Sound > Printers.
3. Select Dell 5330dn Mono Laser Printer PS.
4. Right-click the printer icon and select Properties.
5. Click the Device Settings tab and select Standard Capacity from the Tray 2 drop-down list.

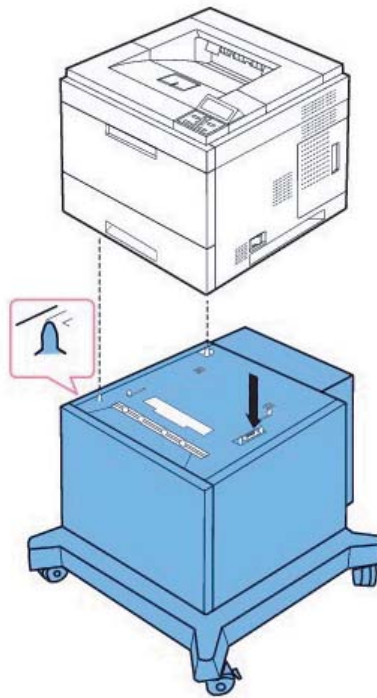


6. Click OK.

7.5.5 Installing High Capacity Feeder

To increase the paper handling capacity of your printer, install a High Capacity Feeder. A High Capacity Feeder holds 2100 sheets of plain paper.

1. Power off the printer and unplug all cables from the printer.
2. Find the location of the High Capacity Feeder connector and alignment pins.
3. Place the printer over the High Capacity Feeder aligning the feet on the printer with the alignment pins in the High Capacity Feeder.

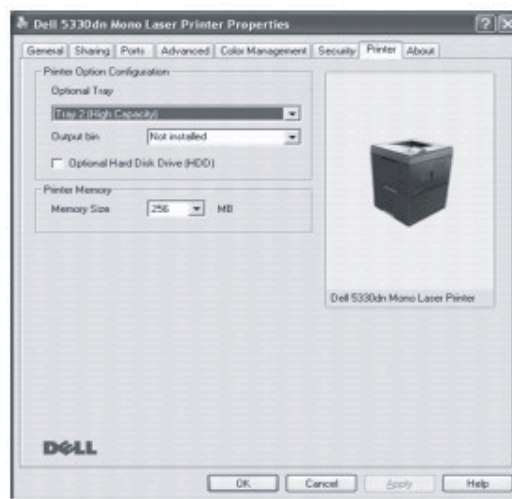


4. Load paper in the High Capacity Feeder. For information about loading paper in this tray, see "Loading Print Media".
5. Reconnect the power cord and cables, then power on the printer.

When you print a document on paper loaded in the High Capacity Feeder, you must configure the properties of the printer driver.

To access the properties of the printer driver:

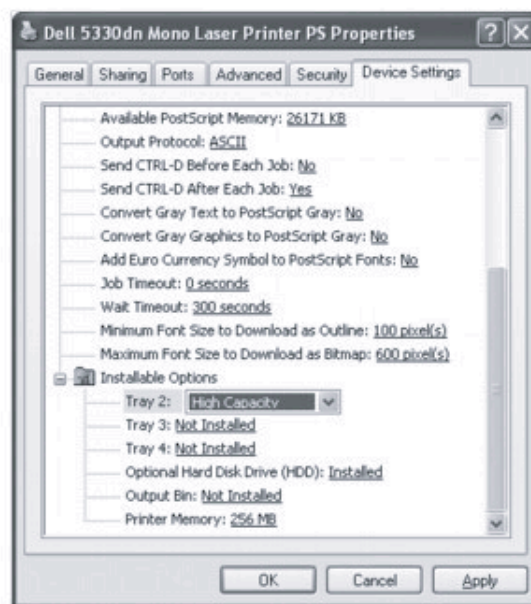
1. Click the Windows Start button.
2. For Windows NT 4.0/2000, select Settings and then Printers.
For Windows XP/2003, select Printers and Faxes.
For Windows Vista, select Control Panel > Hardware and Sound > Printers.
3. Select the Dell 5330dn Mono Laser Printer.
4. Right-click the printer icon and select Properties.
5. Click the Printer tab and select your Optional Tray from the Optional Tray drop-down list.



6. Click OK and print the document.

To set the tray in the printer properties of the PostScript printer driver.

1. Click the Windows Start button.
2. For Windows 2000, select Settings and then Printers.
For Windows XP/2003, select Printers and Faxes.
For Windows Vista, select Control Panel > Hardware and Sound > Printers.
3. Select Dell 5330dn Mono Laser Printer PS.
4. Right-click the printer icon and select Properties.
5. Click the Device Settings tab and select High Capacity from the Tray 2 drop-down list.



6. Click OK.

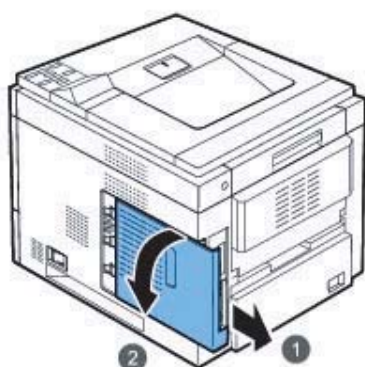
7.5.6 Using the Hard Disk

Installing the hard disk allows the data from your computer to be sent to the printer's hard disk print queue. This decreases the computer's workload. You can also use various print features, such as storing a job in the hard disk, proofing a job, and printing private documents.

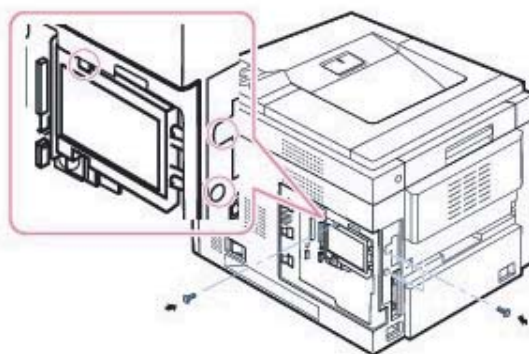
7.5.6.1 Installing the Hard Disk

1. Turn the printer power off and unplug the power cord and printer cable from the printer.

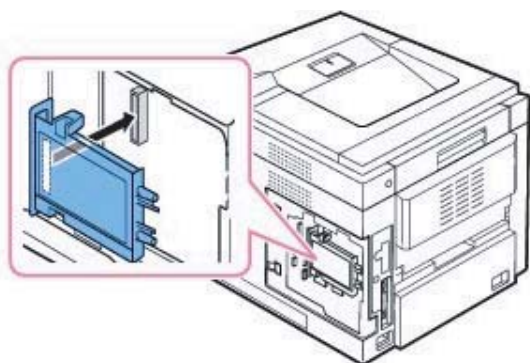
2. Grasp the control board cover and remove it.



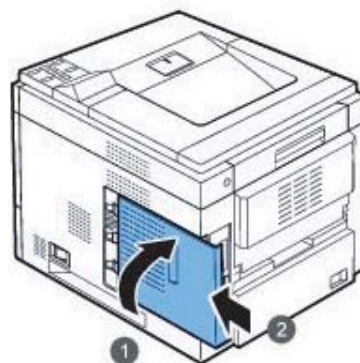
4. Fasten the three screws supplied with your new hard disk.



3. Align the connector on the hard disk with the connector on the control board. Push the hard disk in until it is locked into place.



5. Close the control board cover by aligning the groove on it with the notch on the printer and sliding it.



6. Reconnect the power cord and printer cable, and turn the printer on.

7. Print a configuration page from the control panel to ensure the hard disk is correctly installed.

7.5.6.2 Setting the Hard Disk in the Printer Properties

After installing the hard disk, you need to select it in the printer properties to enable its use.

To access the properties of the printer driver:

Dell 5330dn Mono Laser Printer

1. Click the Windows Start button.
2. For Windows NT 4.0/2000, select Settings and then Printers.
3. For Windows XP/2003, select Printers and Faxes.
For Windows Vista, select Control Panel > Hardware and Sound > Printers.
Select the Dell 5330dn Mono Laser Printer.
4. Right-click the printer icon and select Properties.
5. Click the Printer tab, and check Optional Hard Disk Driver (HDD)
6. Click OK.

Dell 5330dn Mono Laser Printer PS

1. Click the Widows Start button.
2. For Windows 2000, select Settings and then Printers.
3. For Windows XP/2003, select Printers and Faxes.
For Windows Vista, select Control Panel > Hardware and Sound > Printers.
Select Dell 5330dn Mono Laser Printer PS.
4. Right-click the printer icon and select Properties.
5. Click the Device Settings tab and select Installed from the Optional Hard Disk Drive (HDD) in the Installable Options section.
6. Click OK.

7.5.6.3 Printing with the Optional Hard Disk

After installing the optional hard disk, you can use the advanced printing features, such as storing or spooling a print job to the hard disk, proofing a job, and specifying the printing of a private job in the printer properties window.

Once you have stored files in the hard disk, you can easily print or delete the stored files using the control panel of your printer.

Setting the time and date

1. Press Menu.
2. Press Scroll to highlight Settings and press Select.
3. Press Scroll to highlight Setup and press Select.
4. Press Scroll to highlight Date & Time and press Select.
5. Enter the correct time and date using Scroll or Scroll.

Month = 01 to 12

Day = 01 to 31

Year = requires four digits

Hour = 01 to 12

Minute = 00 to 59

and you can also select AM or PM.

6. Press Select to save the selection.
7. Press Cancel to return to Standby mode.

Setting Daylight Savings Time

If your country switches to Daylight Savings Time each year, use this procedure to automatically switch to Daylight Savings Time and to Standard time.

1. Press Menu.
2. Press Scroll to highlight Settings and press Select.
3. Press Scroll to highlight Setup and press Select.
4. Press Scroll to highlight Day Light Saving and press Select.
5. Press Scroll to highlight Manual and press Select.
6. Enter the correct Start date using Scroll or Scroll and press Select.
7. Enter the correct End date using Scroll or Scroll and press Select.
8. Press Cancel to return to Standby mode.

Storing a job

You can store jobs in the installed hard disk.

1. Open the file you want to store.
2. Select Print from the File menu. The Print window displays.
3. Click Properties.
4. Click the Other Options tab and click Job type.
5. Select the Job type you want from the drop-down list.
 - Normal: prints in normal mode
 - Confidential: stores the files, securing them with a password.
 - Proof: prints the first file, and after a pause, prints the next file.
 - Store: stores the file to the hard disk.
 - Spool: spools the file into the hard disk and prints it from the hard disk queue.
 - Print Schedule: prints the file at a specified time.
6. Enter the User ID and Job Name.
7. Click OK until the print window is displayed.
8. Click OK or Print to start printing.

Printing a stored job

You can print jobs currently stored in the hard disk.

1. Press Select when Stored job, press appears on the bottom line of the display.
2. Press Scroll to highlight the your user ID and press Select.
3. Press Scroll to highlight the job name you want and press Select.
4. If you select Confidential or Store in Job type when you storing a job, enter the password and press Select.
5. Press Scroll to highlight the Print 1 Copy or Print Copies and press Select.

Deleting a stored job

You can delete jobs currently stored in the hard disk.

1. Press Menu.
2. Press Scroll to highlight Job Management and press Select.
3. Press Scroll to highlight Clear Stored Job and press Select.
4. Press Scroll to highlight Secure Job or Stored Print and press Select.
If you select ALL, all of the stored jobs in the hard disk will be deleted.

Printing using the form files

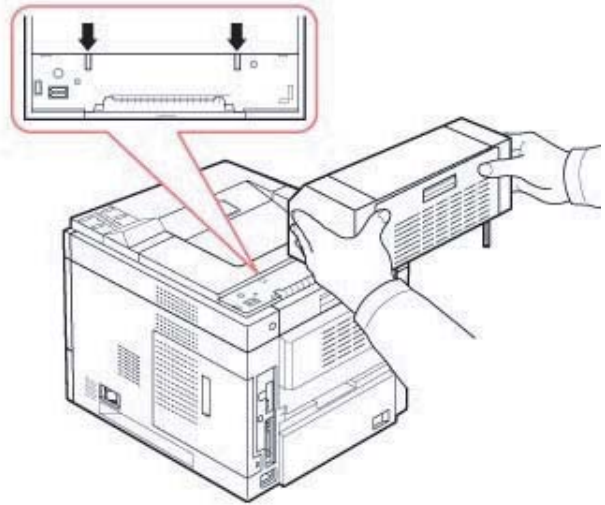
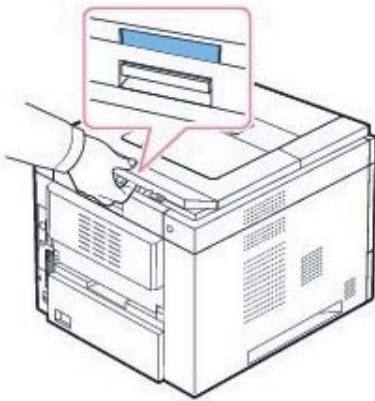
You can store up to 10 form files in the hard disk and have them printed with your document. First, you need to create a form file using the printer driver.

1. Press Menu.
2. Press Scroll to highlight Settings and press Select.
3. Press Scroll to highlight Form Menu and press Select.
4. Press Scroll to select the form you want to use and press Select.
 - Off: prints in normal mode.
 - Single Form: prints all pages using the first form.
 - Double Form: prints the front page using the first form and the back page using the second form.
5. Press Scroll to highlight Select Form and press Select.
6. Press Scroll to highlight 1st Form and press Select.
7. Press Scroll to select the form file you want to use and press Select.
If you select Double Form in Form Menu, continue the next step.
8. Press Scroll to highlight 2nd Form and press Select.
9. Press Scroll to select the form file you want to use and press Select.

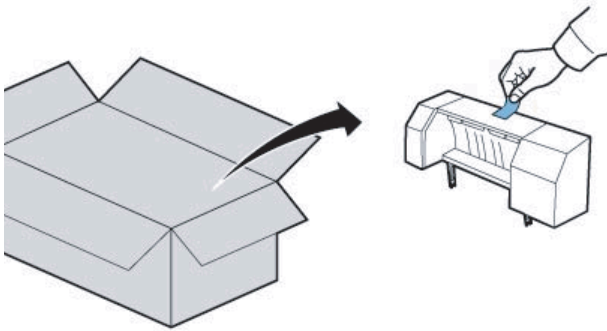
7.5.7 Installing an Output Expander

To increase the paper output capacity of your printer, install an Output Expander. An Output Expander holds 650 sheets of plain paper.

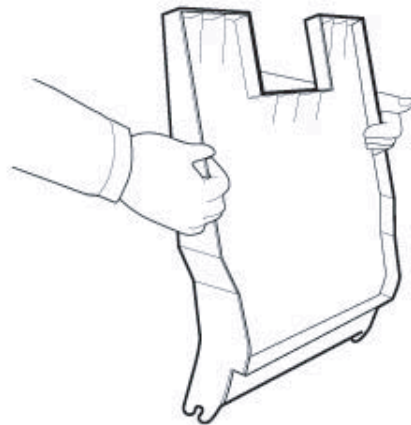
1. Power off the printer and unplug all cables from the printer.
2. Face the back of the printer as shown, grasp the dummy cover, and remove it.
4. Locate the Output Expander alignment pins and insertion slots on the printer. Align the pins on the output expander with the slots on the printer and place the Output Expander on top.



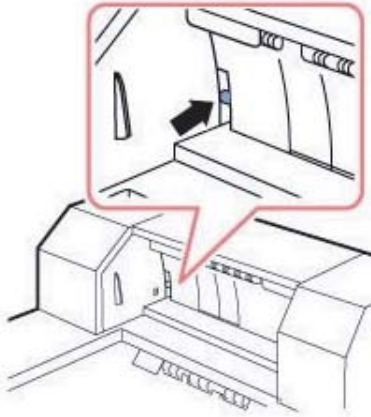
3. Remove the packing tape from the Output Expander.



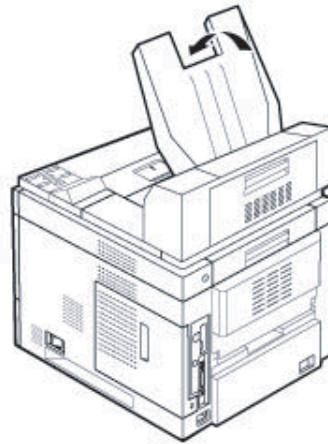
5. Grasp the Output Expander stacker as shown.



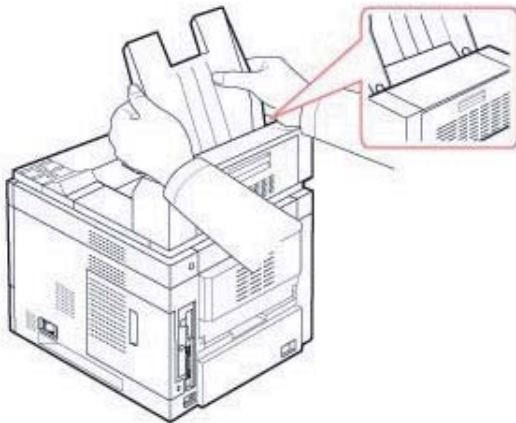
6. Locate the slots on the Output Expander where the stacker will be inserted.



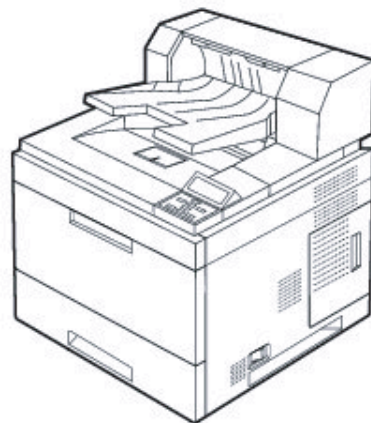
9. Flip the Output Expander stacker down.



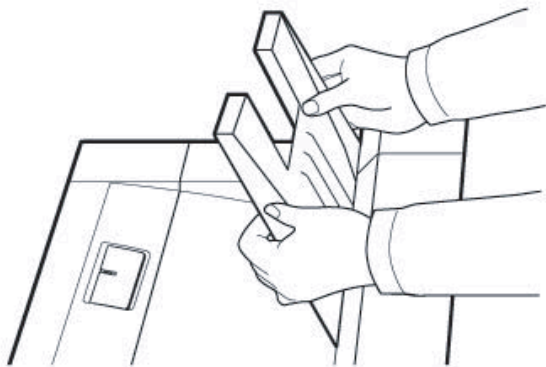
7. Align the stacker, as shown.



10. Reconnect the power cord and cables to the printer and power on the printer.



8. Slide the stacker into the slots on the Output Expander. For easy insertion, ensure there is contact between the rib on the stacker and the top edge of the Output Expander.

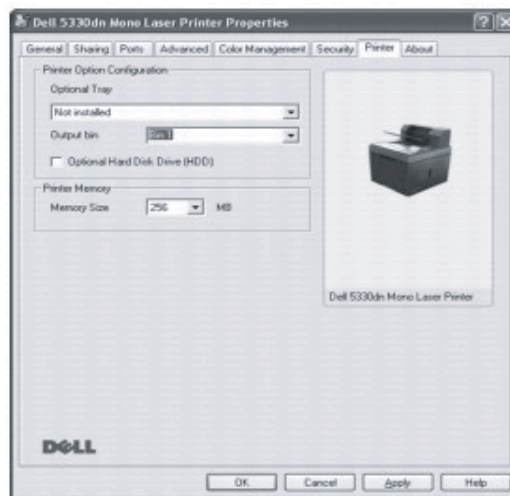


To use Output Expander when you print a document, you must configure the properties of the printer driver.

NOTE: When printing a document using the output expander, remember to configure the printer driver properties.

To access the properties of the printer driver:

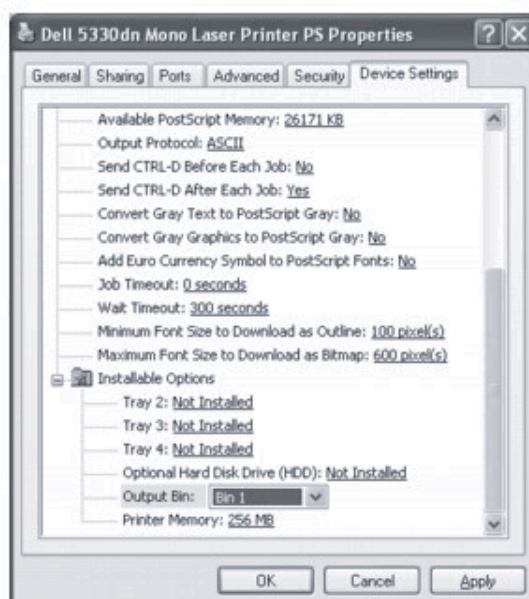
1. Click the Windows Start button.
2. For Windows NT 4.0/2000, select Settings and then Printers.
For Windows XP/2003, select Printers and Faxes.
For Windows Vista, select Control Panel > Hardware and Sound > Printers.
3. Select the Dell 5330dn Mono Laser Printer.
4. Right-click the printer icon and select Properties.
5. Click the Printer tab and select Bin 1 from the Output Bin drop-down list.



6. Click OK and print the document.

To set the tray in the printer properties of the PostScript printer driver.

1. Click the Windows Start button.
2. For Windows 2000, select Settings and then Printers.
For Windows XP/2003, select Printers and Faxes.
For Windows Vista, select Control Panel > Hardware and Sound > Printers.
3. Select Dell 5330dn Mono Laser Printer PS.
4. Right-click the printer icon and select Properties.
5. Click the Device Settings tab and select Bin 1 from the Output Bin drop-down list.



6. Click OK.